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A SERIOUS FALL  
IN THE  
**VALUE OF GOLD**  
ASCERTAINED,  
AND  
ITS SOCIAL EFFECTS SET FORTH  
With Two Diagrams.

BY  
W. STANLEY JEVONS, M.A.

Formerly of the Sydney Royal Mint.

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232. e.

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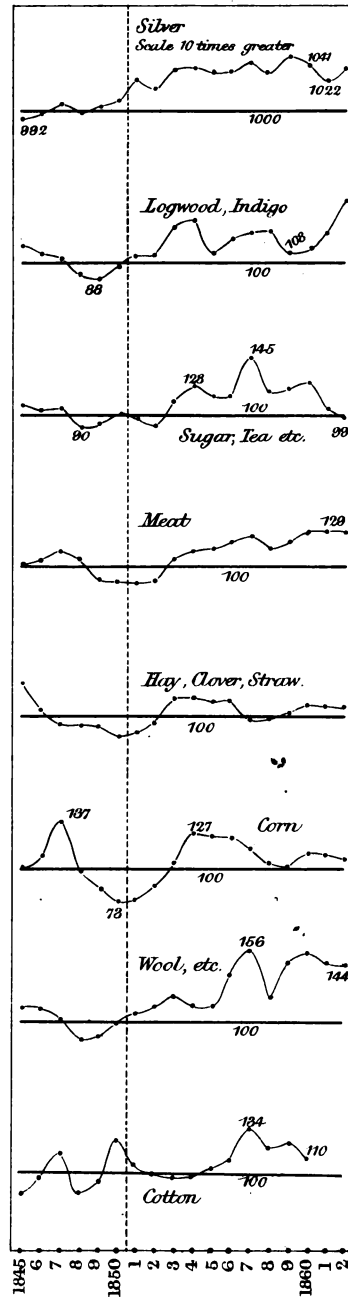
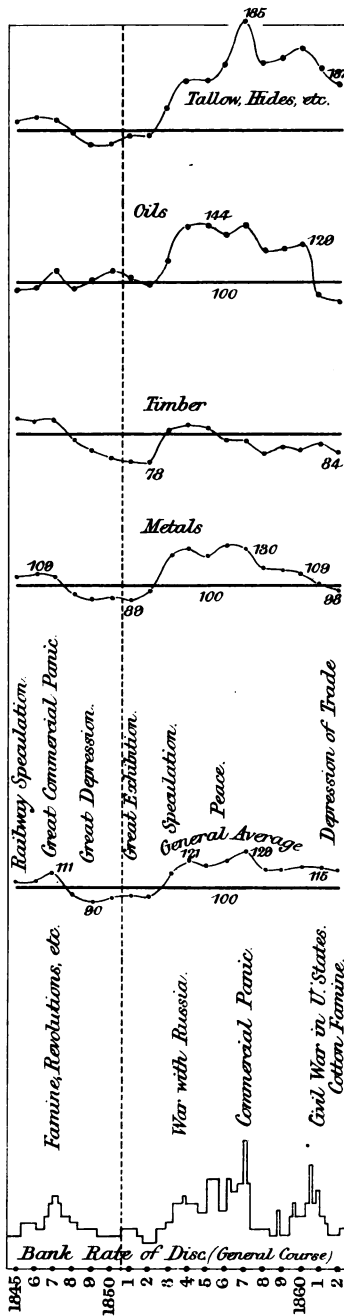


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LONDON:  
EDWARD STANFORD, 6, CHARING CROSS, S.W.

1863.

~~200. n. 40.~~  
232. e. 364

"Now that the pryces of thinges are so rysen, of al handes, you may better lyve after your degree than we; for you may and doe rayse the pryce of your wares as the prices of vittayles and other your necessities doe ryse, and so cannot we so much."

"A compendious or briefe examination of certayne ordinary complaints, of divers of our countrymen in these our dayes."—By W. S. Gentleman. London: 1581.

(See Appendix, note A.)



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## PREFACE.

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THAT an article tends to fall in value as it is supplied more abundantly and easily than before is a most familiar fact. When the discoveries of gold in California were followed in a few years by equally extraordinary discoveries in Australia, and minor discoveries elsewhere, there was no lack of predictions as to the inevitable effect upon the value of gold. But with few exceptions there have been only surmises and conjectures on this highly important subject. Even after the lapse of ten or twelve years men who give their whole attention to public and monetary matters, or to questions of statistics and economy, remain in a state of doubt as to whether any depreciation of gold is really taking place.

M. Chevalier, in his well known work "On the Probable Fall in the Value of Gold," presented to English readers in 1859 by Mr. Cobden, confidently predicted a great fall. He suggested however that it would be deferred some years by the change of the French currency which is proceeding. On the other hand, Mr. Newmarch in the last volume of Tooke's History of Prices, published in 1857, and Mr. MacCulloch, writing in December 1858,\* both doubted the existence of any depreciation. They also seemed to hold that the rapid extension of trade and wealth might cause the absorption of the new supplies of gold without the occurrence of any considerable depreciation. In brief discussions of the subject in the Journal of the Statistical Society (for March 1859, 1860, and 1861), Mr. Newmarch, using a method of comparison in which I have had no choice but to follow him, has seemed to suspend any definite judgment. The question thus continues an open one.

I was only led to form an opinion upon this subject when engaged in compiling tables of the monthly prices of many articles since 1844. I was so much struck with the enormous and almost general rise of prices about 1853, that I was led to suspect an alteration of the standard of value. At the same time the late *comparative* depression of trade in reducing prices as low as they are likely to go, (as it were to low tide), has seemed to me to render the

\* Encyc. Brit. Art. *Precious Metals*.



subject more and more mature for decision. It shows that the great rise of prices in 1853 has not been, and thus probably will not be compensated by any equal fall; that there is consequently a permanent rise of prices certainly constituting a fall in the value of gold, and probably arising from the gold discoveries.

In the following tract I commence by endeavouring to unfold the fundamental difficulties of the inquiry, afterwards discriminating the various causes of fluctuation in prices, in order that we may the more surely recognise the effect of the permanent cause in question. I then introduce tables formed and reduced in accordance with the principles of the subject so as to exhibit a depreciation of gold if any exists. The large depreciation rendered apparent is confirmed by an extended inquiry as regards the prices of 1860-62. The future depreciation of gold is considered on somewhat *a priori* grounds, and the social effects are lastly deduced and commented on.

While I must assert the fact of a depreciation of gold with the utmost confidence, I assign a numerical amount to it with equal diffidence. The lowest estimate of the fall that I arrive at is 9 PER CENT, and I shall be satisfied if my readers accept this. At the same time in my own opinion the fall is nearer 15 PER CENT. It may even be more than this. Many years, however, must pass before numerical estimates can be properly stated to possess more than a slight degree of probability.

## CHAPTER I.

### OF THE NATURE AND DIFFICULTIES OF THE INQUIRY.

#### I.—*Of the Meaning of a Fall in the Value of Gold.*

ALL that is meant by a fall in the value of gold, is the fact that more gold is now usually required to purchase an article than some 15 years ago. The comparative values of two articles are said to be altered when the proportion of the quantities usually exchanged in the open market is altered. This alteration may arise from circumstances affecting the supply or demand of either article, just as a balance may be disturbed by an upward or a downward force, applied to either arm. There is nothing in this single change to indicate from which side the change comes. Thus during the years 1845-50 a ton weight of copper was, on an average, exchanged for about 88 gold sovereigns. During the years 1860-2, the rate was a ton of copper, to about 101 sovereigns. There is nothing in this to show whether gold is become more abundant and easily obtained, or copper more scarce and troublesome to procure. It may be, and probably is the fact that the circumstances of demand and supply are altered on both sides. The observed effect is then the sum or difference of effects, of which we learn nothing from the simple alteration of values stated.

When a number of articles are exchanged against each other we are still unable to say with certainty, on what side arises any change in the proportion of the exchanges. Thus, if the value of an article A (gold, for instance), falls in comparison with several other articles, B, C, D, E, (copper, lead, tin, silver, for instance) so that the same quantity of A purchases less of each of B, C, D, E, than it used to do, this may arise either from causes affecting A only, or from causes affecting each of B, C, D, E. The value of A may fall from a lessened demand or an increased supply. The value of each of B, C, D, E, may rise from increased demand or lessened supply. The mere alteration of values is the *same fact*, whether arising on one side or the other.

There is something however which we may say in the case of five articles, but not say in the former case of two articles. *It is more likely that the alteration should have arisen on the side of A than on the side of B, C, D, E*, because one cause affecting A, will suffice to explain the change, four separate but concurring causes respectively affecting B, C, D, E, will be needed on the other side. The odds are four to one in favour of the cause of altered values being in A, and not in B, C, D, E.

If again we compare A with a still larger number of other articles, B, C, D, E, F, G, H, etc., and find that all of these have risen or fallen with regard to A, the odds are still greater in favour of A having caused the alteration. It is obvious, in short, that an alteration in any one article, A, is shown in its rate of exchange with all other articles, so that the fact of an alteration may be ascertained with a continual approach to certainty, by examining more and more articles against A. But there always remains the alternative of a concurrence of causes affecting the other articles, not a single cause affecting A.

The chief difficulty of thus investigating an alteration of values arises from the independent alterations of value, which each of B, C, D, E, will doubtless undergo. Besides rising from an alteration in A, B may rise still further from an alteration peculiar to itself. On the other hand C may not rise at all or may fall in value, because its rise due to A may be neutralized, or more than neutralized by a fall due to itself, and similar of D, E, F, etc. All will suffer the effect due to A, but this will be disguised by the various accidents which effect B, C, D, etc.

We must again fall back upon mere probabilities. If the majority of B, C, D, etc., have risen in value, and only a minority fallen, it is more likely that a single cause acting on A should have led to a general rise than that the majority of B, C, D, etc., should have been affected by separate but concurring causes.

And in determining the average alteration of value with respect to A, of a sufficient number of articles B, C, D, E, etc., we may always ascertain the common alteration probably due to A. For the various and contrary alterations peculiar to B, C, D, etc., will destroy each other, more or less completely in drawing the average, and only that common alteration, which all equally suffer in being *measured against A*, will remain undiminished.

To apply this analysis to our present inquiry, we have only to consider A as being gold, and the rates of exchange of B, C, D, etc., the prices of articles in pounds sterling and their fractions as usually quoted. If prices on the average have risen ever so little, *this constitutes a fall in the value of gold*. If only one article had risen in price while the others remained as before, gold must be said to have fallen in some degree. Value is a vague expression for potency in purchasing other articles, and if gold has become less potent with respect to some and not more potent with respect to others, it has fallen in value. The same may be said, however various and contrary the alterations of prices, provided those rising preponderate in a certain way over those falling. *It must be confessed, however, that the exact mode in which preponderance of rising or falling prices ought to be determined is involved in doubt*. Ought we to take all articles on an equal footing in the determination? Ought we to give most weight to those which are least intrinsically variable in value? Ought we to give additional weight to articles according to their importance, and the total quantities bought and sold? The question, when fully opened, seems to be one that no writer has attempted to decide—nor can I attempt to decide it. Fortunately, the conclusions I shall have to adopt, may I believe be sustained under any and all modes of estimation that are likely to be proposed. I regard the fall of value as conclusively proved, although the exact nature of the problem is left amid the obscurities of economical science in general.

All that I can pretend to *prove* in this inquiry is that, subject to the vagueness just referred to, the prices of commodities have risen, or that the rise of prices of those which have risen, preponderates over the fall of those which have fallen. *This is, and constitutes* the alteration of value of gold asserted.

It is quite another question how this fall of value is caused. It may be from an increased supply of gold, or a diminished demand for it. It may also arise from an increased demand for one or more articles not accompanied by a corresponding demand for gold, or a diminished supply not accompanied by a corresponding change of supply of gold. Anything affecting the value of gold, in short, must affect either gold apart from other articles, or other articles apart from gold, or at least it must affect one side more than the other. It is with a less degree of confidence and certainty that it can be stated on which side of the balance the disturbance arises. If, as is no doubt the

case, disturbances on both sides contribute towards the effect, it will be still more difficult to discriminate between the portions of the total effect due to one cause and another. By what has gone before, however, it is obviously more likely that any considerable and general change of prices should arise from a single circumstance affecting the demand or supply of gold only, than from a variety of circumstances separately affecting all or most other commodities. Joined to the fact that circumstances have occurred in the production of gold which would probably cause a considerable rise of prices, it is hardly to be doubted that any rise of prices which we may discover is for the most part due to such circumstances. But I am far from denying that there may have been such alterations in the comparative demand for gold, and for certain other chief materials of manufactures, or other articles of commerce, as might contribute in an appreciable degree to the change of prices in question.

In the minds of some few there may be confusion between the *exchange value of gold, the value of money in the money market, and the Mint price of gold*. These things have not the slightest connection with each other. The *value of money* in the money market, means the interest or profit yielded by money or capital which is lent and borrowed. But as the loan consists of gold, or at least of something estimated in gold, and the interest is also paid by a certain percentage of gold, this percentage or ratio is quite independent of the value of the gold which forms both capital and interest.

The *Mint price of gold* again merely defines the weight of a sovereign, or the number of sovereigns, and parts of a sovereign into which the Mint converts an ounce of gold. The delusion of those who want free trade in gold as well as everything else, merely amounts to doing away with coins of any fixed weight. They might as well, at the same time, do away with all fixed weights and measures, so that all fixed promises should be impossible, so that he should get who can, and give who cannot help.

## II.—Of the meaning of an average Rise of Prices.

There is no such thing as an average of prices at any one time. If a ton of bar iron costs £6., and a quarter of corn £3., there is no such relation or similarity between a ton of iron and a quarter of corn as can warrant us in drawing an average between £6. and £3.; and so of other articles. If at a subsequent time a ton of iron costs £9,

and a quarter of corn £3. 12s, there is again no average between these quantities. We may, however, say that iron has risen in price 50 per cent, or by  $\frac{1}{2}$ ; what was 100, has become 150; corn has risen 20 per cent, or by 1-5th; what was 100 has become 120. Now the ratios 100:150 and 100:120, are things of the same kind, but of different amount, between which we can take an average.

This average percentage or ratio must be not the arithmetical but the geometrical average; not  $100 : \frac{120+150}{2}$  or  $100 : 135$ , but  $100 : \sqrt{120 \times 150}$ , or the ratio of 100 to rather more than 134.16. The mean ratio  $\frac{134.16}{100}$  indeed differs so little from  $\frac{135}{100}$  that in common

business matters it would be sufficient to take the simpler arithmetic mean in place of the other, and neglect the error. But this cannot be done in the present inquiry, where our alterations of prices have a large range, from more than 50 per cent decrease to more than 100 per cent increase. Thus the price of cocoa has nearly doubled since 1845-50. It has increased by 100 per cent, so that it is now nearly 200. Cloves, on the contrary, have fallen 50 per cent, and are now at 50. The arithmetic mean of these would be  $\frac{200+50}{2}$  or 125. The

average rise of cocoa and cloves would then appear to be 25 per cent. But this is totally erroneous. The geometric mean of the ratios 200 and 50, or which is the same of 2 and  $\frac{1}{2}$ , is 100 or 1. On an average of cocoa and cloves there has been no alteration of price whatever. The price of one is doubled, of the other halved—one is multiplied by two, one divided by two—on the average, then, the prices of these articles remain as they were, instead of rising 25 per cent.

A corresponding error of less amount would be committed in every case did we take the simple arithmetic mean of percentages. The general result would be greatly to exaggerate the prices which have risen at the expense of those which have fallen. The average rise of prices would come out much greater than it really is, and our results would be utterly erroneous.

To take the geometrical mean of two ratios we must multiply them together and extract the square root of the product. This is easily accomplished by turning the numbers into their common logarithms, the arithmetic mean of which is the logarithm of the geometric mean required. All the percentages required have accordingly been

calculated in logarithms, and the averages drawn in that form, but afterwards turned back into ordinary numbers. Without guaranteeing the absolute accuracy of every figure, deduced from tedious calculations, it may be said that more than reasonable trouble has been employed to ensure accuracy, and that the final conclusions cannot be erroneous in any appreciable degree.

III.—*That we must discriminate a Permanent from Temporary fluctuations of Prices.*

So far we have considered only the mode by which we may ascertain alterations of prices in general, between any two periods, without reference to the character of the alterations. There may, however, be alterations of prices which are temporary, and it is a more difficult matter to prove that any alteration observed is a permanent one. For this purpose we must briefly analyse the whole causes of fluctuations in price. Such causes may be divided into (1) those which affect the supply, and (2) those which affect the demand for commodities.

IV.—*Of fluctuations of Supply.*

All articles of commerce might be arranged in a list according to the degree in which their supply is subject to natural fluctuations unconnected with the demand. The more variable of course are those agricultural products entirely dependent on the seasons. Hops perhaps stand at the head of the list, soon followed by potatoes, and by the several kinds of grain. All vegetable commodities are more or less variable. Animal products, such as butcher's meat, dairy produce, hides, sperm oil, undergo much slower *temporary* fluctuations. Finally we reach mineral substances, especially the chief metals, iron, copper, lead, silver and gold, of which the natural conditions of supply experience no temporary fluctuations of importance. The gradual exhaustion of mines is compensated by occasional new discoveries, but except in very rare instances the changes are slow and small. Social causes, such as wars, civil disturbances, disputes among workmen, are also incapable of causing fluctuations of supply of any importance. Hence many of the metals may be taken as comparatively stationary in value, except so far as the price may be dependent on variations of demand.

Our duty as regards fluctuations due to changes of supply is to have nothing to do with them, but to eliminate the effects from our inquiry as soon and as completely as possible. That a commodity

is naturally very variable in price, is no reason for excluding it wholly from our tables. It is only necessary to select such a number and variety of articles independent in their fluctuations, that the fluctuations of some may probably compensate the others. Were we to begin by excluding commodities because variable in price, we should not have more than two or three articles left. Wheat, for instance, because it varies in a few years from 40 to 60 and 80 shillings per quarter, does not the less suffer an additional alteration from any change in gold. Alone it would afford no sure indication of such alteration in gold, but we take it in company with hay, clover, and straw, with meat and butter, with cotton from several parts of the world, with sugar from the East and West Indies, with spices, dyewoods, and various other important products, each subject to its own independent natural fluctuations, but all subject to vary in price with the variations of value in gold of which we are in search. In drawing our averages the independent fluctuations will more or less destroy each other; the one required variation of gold will remain undiminished. Again, were we to exclude some commodities from our tables because variable in price from natural causes, we should have to exclude nearly all the rest from variations depending on demand. *The only mode of eliminating these fluctuations is to render our inquiry not more exclusive but more inclusive.*

#### V.—Of Political Causes of Fluctuation.

During the Russian war the prices of Hemp, Flax, and Tallow, of course rose above their ordinary or natural level. During the present blockade of the ports of the Southern United States, Cotton has risen to three or more times its natural value. It will be more generally satisfactory, no doubt, to exclude such unusual fluctuations from our inquiry altogether. This accordingly has been done. In the case of Hemp and Flax, the prices of 1853, 1854, and 1855 were struck out and numbers interpolated in a geometrical series between the prices of 1852 and 1856. In the case of Cotton, the prices of 1861 and 1862 were struck out, and that of 1860 adopted for those years, as being obviously unaffected by the present cotton famine. In the case of Tallow, the correction was accidentally omitted.

It is, however, an open question whether such extraordinary rises of price are not compensated by a corresponding fall in the prices of other commodities due to the stagnation of trade which a war or the



stoppage of a great branch of industry occasions. For the sake of clearing the inquiry of difficulties, I do not insist on this view.

#### VI.—Of Variations of Demand.

Important variations of demand arise only from changes of fashion, taste, habit; from a few exceptional causes, such as wars, national works, or fêtes; and from certain great fluctuations in industry, which alone need be further analysed here. The demand for bread, meat, spirits, spices, and articles of food and personal use generally, may be regarded as constant, or only affected slightly and indirectly by the floods of prosperity and depression depending on the commercial fluctuations to be further mentioned. Thus, *articles of immediate and personal use, speaking generally, are constant in demand, variable in supply.* Metals, timber, and other *articles of more permanent and remote use*, are comparatively *constant in supply*, but I have to show that *they undergo great variations in demand.*

#### VII.—Of Variations of Permanent Investment.

That great commercial fluctuations, completing their course in some ten years, diversify the progress of trade is familiar to all who attend to mercantile matters. The remote cause of these commercial tides has not been so well ascertained. It seems to lie in the *varying proportion which the capital devoted to permanent and remote investment bears to that which is but temporarily invested soon to reproduce itself.*

A large part of the industry of the country must annually be applied in agriculture and manufactures to produce the food, clothing, and other articles required for immediate use, the demand for which, as I have said, cannot much vary. It is by the sale of these finished articles that capital invested in materials, and the payment of wages, is returned as ready money, available for fresh investment. While uninvested, it contributes to form the reserve of loanable capital in the Bank of England, and in other banks, or private hands.

It is quite otherwise with those permanent investments in houses, ships, improvement of land, manufactories, mines, railways, foreign loans or undertakings, of which the result is durable, and not expected to make a ready money return for what was invested, but after the course of many years, or as annual interest. These undertakings are the great means by which the wealth of the country is

increased. Temporarily, however, they absorb the means of subsistence of the community—they are wealth *in posse*, rather than *in esse*. Were a certain definite proportion of the capital of the country set apart every year for such long dated investments, the returns of capital which they would make would be as regular as the absorption of capital. But this is not the case. It is the peculiarity of these great and permanent works to multiply at particular periods. When capital is abundant, its owners look out anxiously for some mode of profitable employment. Any new discovery, or fresh employment for money is eagerly taken up. Hope of gain is a most contagious emotion among business men, and presently hundreds set themselves to carry out this new discovery upon a most extended scale.

While one scheme is prospering so well, the circumstances of the market and the feelings of men are not less propitious for any other schemes which have at all a good appearance. Further description is needless; it is well known nothing is so difficult to restrain within prudent bounds as these manias for speculative investment. It is needless also to add that the most extraordinary of these manias was that for railway construction in 1843-6, when hundreds of millions were rashly subscribed among the various classes of the community.

During such a mania industry is thrown into extraordinary activity, and also into unusual channels. The ordinary consumption of food, clothes, etc., goes on of course as usual, or even increases somewhat. On the other hand, the demand for timber, iron, bricks, and countless other commodities of more permanent nature, is greatly increased. Their production being incapable of any but a slow extension, their price rises. Part of the available labouring power of the country is transferred to their production. Prices are thus started upwards, and unwonted prosperity and hopes of gain fall upon nearly every one in the country.

The wealth created during such a period of unwonted activity, probably far overbalances any loss which follows. Hitherto, however, great losses have usually followed. To explain exactly how the revulsion comes, is perhaps a feat of analysis not yet accomplished. The salient fact is a great dearth of capital, or loanable money (gold), due no doubt to the previous great permanent investment. The arrival of this dearth is generally accelerated by the failure of the harvest, or some event which cuts off a large part of the anticipated

gains of the country. The result is that the stocks of commodities cannot be sold against the stock of available ready money at the point to which prices have advanced. Merchants would gain if they could hold on, but they cannot hold on because there is no one to lend them money to pay their bills, with which they have bought their goods. To sell at less prices is loss or even ruin. Then comes the panic and the collapse of credit.

That these great commercial fluctuations arise in the periods of great permanent investment is perhaps sufficiently shown for our present purposes, in the following table :—

Years.	Bricks made in U. K.	Loads of un- sawn Timber imported.	Price of Welsh Bar Iron in Liverpool.†	Years.	Bricks made in U. K.	Loads of un- sawn Timber imported.	Price of Welsh Bar Iron in Liverpool.†
	Millions.	Thsnda.	£. s. d.		Millions.	Thsnda.	£. s. d.
1821	979	417	8 17 6	1841	1,426	756	7 5 0
†1822	993	583	8 7 6	1842	1,274	527	6 0 0
1823	1,265	545	8 7 6	†1843	1,161	708	5 0 0
1824	1,493	611	10 0 0	1844	1,420	758	5 15 0
*1825	1,991	755	14 0 0	1845	1,821	1077	8 7 6
1826	1,381	612	10 7 6	1846	2,040	1249	9 0 0
1827	1,124	533	9 10 0	*1847	2,042	1031	9 2 6
1828	1,104	530	8 17 6	1848	2,194	929	7 0 0
1829	1,135	557	7 7 6	1849	1,461	818	5 12 6
1830	1,112	505	6 10 0	1850	1,463	868	5 0 0
1831	.	569	6 2 6	†1851		1102	4 17 6
†1832	998	557	5 17 6	1852		924	5 17 6
1833	1,036	527	6 15 0	1853		1180	8 10 0
1834	1,152	558	7 0 0	1854		1216	9 7 6
1835	1,349	694	6 15 0	1855		909	7 17 6
1836	1,606	688	10 15 0	1856		1081	8 0 0
*1837	1,491	660	9 5 0	*1857		1179	7 10 0
1838	.	725	9 10 0				
*1839	1,576	726	9 15 0				
1840	1,748	817	8 7 6				

Years marked \* are those of commercial difficulty and revulsion. Years marked † seem to be those with which the great commercial fluctuations begin and end.

† From a circular of an old Liverpool iron exporting firm.

The high price of iron, and the increased production of bricks, show periods of great investment, and these correspond exactly with the well known periods of commercial difficulty, in 1825, 1836-9, and 1847; indeed, if the above numbers were drawn out in a curve, its form would be found to correspond closely with the curve of bankruptcies during the same years.

VIII.—*Of Prices as dependent on Credit.*

What greatly assists a rise of prices, started in a period of free investment, is the system of credit on which trade is necessarily conducted. By this system a trader is not obliged to be the real owner of the goods in which he trades, but may freely buy by giving the promise of payment in, perhaps, three months time. Thus the goods really belong to the holder of his promissary note, or bill; only the margin of profit or loss usually falls to the share of the trader. The result of this system of purchase on credit must be that the prices are not restrained at every moment by the quantity of gold in the country to make payments. Prospective payments take the place of present payments, and in the mean time the bills created may circulate from one to another as if they were an embodiment of so much gold.

So long as prices rise every trader is enabled to discharge his liabilities at any required moment; they may be bought by others with a still more free recourse to credit. Thus, prices and credit mutually inflate each other. But there is a check to this process. Though the merchant does not own the goods, there must be some one to own them, to advance capital, or, as it is said, to discount the bills arising out of the transaction. Now this capital is limited, and the available amount is reduced during the period of permanent investment, from which a rise of prices proceeds. It is the exhaustion of this capital which limits credit; it is the limitation of credit which must sooner or later bring prices to a stand, or even cause them to recede to a rate much lower than they had reached. In this revolution and recession of prices, some class must suffer a loss; those who are too much dependent on credit will suffer bankruptcy, and inflict part of the loss on others.

While the elasticity of credit, then, may certainly, as it seems, give prices a more free flight, the inflation of credit must be checked by the well defined boundary of available capital, which consists at the last resort in the reserve of notes, equivalent to gold, in the Bank of England. *Prices temporarily may rise or fall independently of the quantity of gold in the country; ultimately they must be governed by this quantity.* Credit gives a certain latitude without rendering prices finally independent of gold.

IX.—*Of Prices after a Revulsion.*

A revulsion occasioned by a failure of the national capital must cause, not only a collapse of credit, and of any inflation of prices due to credit; it must put an end to the formation of new schemes of permanent investment. Schemes already on foot will, as far as possible, be continued, and must for a time keep up the price of permanent materials. As by degrees these schemes are completed, the demand for materials will decrease as rapidly as it formerly increased. Their prices, therefore, will fall and remain low until the fresh accumulation of free capital causes speculation again to germinate.

X.—*Of other supposed causes of Fluctuation.*

Even if there be nothing erroneous in the preceding analysis of a great commercial fluctuation, I am far from supposing that the exact relations of prices, commodities, gold, and capital, have been hit upon. I do not believe that any of our economical writers have yet untied this Gordian knot of economical science, although some cut it in a very unhesitating manner. One of these summary modes of procedure is the currency theory, which attributes every fluctuation of prices to an extension of the bank-note circulation. Now by the action of the Bank Charter Act, it is provided in the most satisfactory manner, that every note in the country that is likely to be presented at the Bank for payment, shall be met there by its equivalent amount. Thus, any influence which the note can have is that of its equivalent gold. Under the old state of things it was almost the same, because the prudence of the Bank management, might be said to maintain the notes really convertible.\*

Another favourite theory of some is the dependence of our commercial condition on the foreign exchanges. This is another twist in the Gordian knot which it is not easy to untie in detail, and is not right to cut. But taking a general view of the matter, it will appear that the foreign exchanges merely link trade in one country to trade in another. The natures of gold, of capital, and of commodities are not changed by being carried over the sea, and with certain minor exceptions, trade between England and Germany, or England and America,

\* On the relation of the note circulation to prices, see App. Note B.

is subject to the same great laws as trade between England, north and south of the Trent, or between the manufacturers and the agriculturists within the nation. The fluctuations of investment of capital, prices, stocks of commodities, and of the standard of value, whether gold or not, would not be altered in nature if we had no foreign exchanges at all.

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## CHAPTER II.

### INQUIRY INTO PRICES BEFORE AND AFTER THE GOLD DISCOVERIES.

#### *XI.—Of the Elimination of temporary Fluctuations.*

WHAT little has been correctly stated in the previous chapter as to the procedure of commerce, may serve to explain the real fluctuations of prices which my tables will disclose. At the same time, we shall be put on our guard against mistaking any temporary fluctuation due to excessive investment or credit, for the effect of gold depreciation. The twelve years which have elapsed since the Australian discoveries have scarcely covered more than a single great fluctuation of commerce, in the effect of which those of gold depreciation must necessarily be disguised. To eliminate the effects of such commercial disturbances, in our comparison of prices before and after the gold discoveries, we might compare the prices at corresponding points of the commercial tide. This method, proposed by Mr. Cobden in the preface to his translation of Chevalier's *Essay*, is theoretically correct, but practically useless. Commercial fluctuations are never so similar and well marked that we can discover exactly corresponding points in each. Since 1851, too, they have been so much interrupted by wars, that we find no definite undulation of prices sufficiently comparable with that of 1844-50.

In these circumstances, I adopted the method, partly the same as that previously used by Mr. Newmarch, of comparing the prices of

every part of the commercial fluctuations since 1851, not with the similar parts of a previous fluctuation, but with *a certain average price fairly drawn from all parts of the previous fluctuation of 1844-50*. We must then form the best judgment we can as to the part of the commercial tide, in which any year since 1851 is situated, and allowing for the height of the tide, judge how far the level of prices has been permanently altered by the gold discoveries. We thus eliminate, I conceive, so far as it can now be done, the fluctuations of prices due to varying demand, and dependent on the manias for permanent investment, and the inflations of credit. The natural variations of supply, which chiefly affect the articles of more immediate use, are at the same time destroyed, as far as may be, in the drawing of our averages.

## XII.—*Of the Method adopted.*

To carry out the inquiry on these principles, I proposed to define the commercial tide which culminated in 1847, as commencing with 1844, and ending with 1850. For these tides begin and end with abundant capital, and with low water, as it were, in the rate of interest. Thus the *turn of the tide* will be at the moment of minimum rate of interest, or perhaps more truly about the *middle of the period when interest is at or near its lowest*. Now the rate of discount or interest was at its minimum, in the years 1843 and 1844, when it sank as low as  $1\frac{1}{2}$  per cent, and scarcely rose at all above  $2\frac{1}{2}$  per cent. It gradually rose during 1845, reached 5 per cent early in 1846, and, after a temporary relapse, advanced to 10 per cent, its culminating point, in November 1847. Before the commencement of 1848, it had already dropped to some 4 per cent, and thence continuously fell to 2 per cent in 1850. A temporary rise in 1851 was succeeded by the extraordinary depression to  $1\frac{1}{2}$  during the last 8 months of 1852. It was now that the speculative period of 1853 commenced, only to terminate completely in the stagnation of last year (1862). I think there are two pretty well defined periods of low interest, 1843-4 and 1849-52, neglecting in the latter the very minor rise of interest in 1851. It is accordingly in the middle points of these periods, *the beginning of 1844, and the end of 1850*, that I place the limits of the fluctuation of 1847. The average prices of this period I regard as

free from any influences of speculation, or inflated credit. At the same time, this period affords a good average price of grain and other agricultural produce, because these articles suffered a well-marked fluctuation of prices, culminating in the famine of 1847, just about the middle of the period.

By a further happy coincidence, this period 1844-50, selected with reference only to the rate of interest, is also nearly the best we could have selected with reference to the date of the gold discoveries. The year 1851 is that of the Australian discoveries, and that also about which the supplies of Californian gold began to be of importance.

In place, however, of the seven years average, 1844-50, I was obliged to adopt the six years average, 1845-50, because the price lists of the *Economist*, which I used, do not commence at all till July 1844, and did not assume the full form which they have ever since retained till the beginning of 1845. To have used data for 1844 drawn from other price lists, would have introduced doubt and error in place of additional certainty, because articles are not necessarily quoted in an exactly similar manner in different lists. There is also no reason to suppose that the inclusion of the year 1844 would have sensibly altered the average. To include 1851 in my average in place of 1844, would only increase my estimation of the subsequent rise of prices.\*

It may perhaps be objected that six years are not sufficient for furnishing a correct average of prices. But if the period were extended at all, it would have to be extended to the commencement of the previous commercial tide, some ten years earlier, about 1833 or 1834. This would have added greatly to the labour of the inquiry; it would also have rendered it less worthy of reliance. Recourse must have been had to various different lists of prices, and numerous discrepancies in the qualities of the articles quoted, or the conditions of their production must have crept in. The shorter the space of time over which our comparison extends, the less will it be affected by long continued and radical alterations of demand or supply, which perhaps there is no proper mode of eliminating. In the balance of advantages and disadvantages, I think that the period 1844-50, or 1845-50, will give the most reliable *datum line*, as surveyors would say, that can be found.

\* See App. note C.



### XIII.—*Compilation of the Tables of Prices.*

Tables of the monthly prices of 39 articles of commerce were compiled from the price lists of the *Economist*, and from other sources, as described in the following list. The quotations were usually taken, as near as may be, to the middle of each month, from the *Economist*, dated between the 14th and 20th of the month. Though it is a matter of indifference as regards the present subject, it seems obvious that single monthly quotations should be taken at the middle of the month rather than at the beginning, as is commonly done. They thus belong more properly to the month, correspond more truly with the monthly tables of the Board of Trade, and are less liable to disturbance from the monthly settlements.

It is usual in all commercial quotations to state, not an average price, but the highest and lowest prices, comprehending any varieties of quality, as well as any variations of price in the period considered. In this form, however, it is impossible to deduce any exact conclusions from the numbers. To ascertain whether prices are rising or falling, we must take the average of the highest and lowest, and consider it as the average price of a medium quality. To treat the higher and lower qualities as separate commodities, might be a more rigorously correct method, but it would double the labour of an inquiry, already sufficiently laborious, without any corresponding gain. It is only in the case of a few commodities, such as indigo, that the range of qualities is so great as to cause any uncertainty. In the case of the metals, oils, and most important articles, there is little or no range of price.

### LIST OF THIRTY-NINE CHIEF COMMODITIES.

#### METALS.

1. *Silver*—Standard bars per ounce Troy From the *Economist*, with some quotations completed from the *London Mercantile Price Current*, and the *Banker's Magazine*.
2. *Tin*—English blocks, per ton.
3. *Copper*—tough cake, per ton.
4. *Lead*—English pig, per ton.

5. *Bar Iron*—British, per ton.
  6. *Pig Iron*—No. 1. Wales, per ton.
  7. *Tin plates (Iron)*—Charcoal, 1 C. per box.
- Nos. 2-7 from the *Economist*.

## VEGETABLE AND ANIMAL MATERIALS.

8. *Palm oil*—per ton.
9. *Linseed oil*—per ton.
10. *Tallow*—St. Petersburg, 1st yellow candle, per ton.
11. *Hides*—Buenos Ayres and Monte Video, dry, per lb.
12. *Leather*—Crop hides, 30 to 45 lbs., per lb.
13. *Timber*—Dantzic and Memel fir, per load.
14. *Logwood*—Campeachy, per ton.
15. *Indigo*—Bengal, per lb.

Nos. 8-16 from the *Economist*.

## FIBROUS MATERIALS.

16. *Upland cotton*—per lb.
17. *Pernam. cotton*—per lb.
18. *Surat cotton*—per lb.

Nos. 16-18. The yearly average prices of the three chief varieties of cotton were taken from an excellent table and paper in the *Exchange Magazine* for October, 1862, reprinted in the *Journal of the Statistical Society*, for December. The average price of fair quality for 1862, has been added on p. 21, from the data in the *Economist*; but to avoid the exceptional disturbance of prices in 1861-2, the low prices of 1860 have been repeated in those years, in making up the averages.

19. *Wool*—English fleeces, Southdown hogs, per pack of 240 lbs.
20. *Silk*—Cossimbuzar, per lb.
21. *Flax*—Riga, W. F. P. K., per ton.
22. *Hemp*—St. Petersburg, clean, per ton.

Nos. 19-22 from the *Economist*.

## CORN.

23. *Wheat*. 24. Barley. 25. Oats. 26. Rye. 27. Beans. 28. Peas.

Nos. 23-28. The monthly *Average Gazette* prices, per Imperial quarter, taken from the *Statistical Abstract* of the Board of Trade, or from the *Journal of the Statistical Society*. These averages are deduced from official returns from all the chief market towns in England and Wales,

and, of course, afford most reliable data. The numbers for 1862 apply only to the first nine months of the year.

#### AGRICULTURAL PRODUCE, MEAT, ETC.

29. *Hay.*

30. *Clover.*

31. *Straw.*

Nos. 29-31, average of the highest and lowest prices per load, as given in Dodsley's "Annual Register for the London Markets." Prices for 1862 in Smithfield market added from the *Times*.

32. *Beef.*

33. *Mutton.*

34. *Pork.*

Nos. 32-34, average of the highest and lowest prices, per stone of 8lbs., in Smithfield, or the Metropolitan Cattle Market, as given in the *Annual Register*. The numbers for 1862 were filled up from the *Times*, and seem rather *below* what they would have been given in the *Register*, the exact mode of quotation in which is not stated.

35. *Butter*—per cwt. Limerick, 1845-50; afterwards Waterford, first quality new. In the earlier years Limerick and Waterford butter were often confused together in the *Economist*, the price of Limerick seeming, however, to be one or two shillings more than that of Waterford, though afterwards Waterford became superior to Limerick. To prevent any doubt, the rather higher prices of Limerick butter were taken in the earlier period from the *London Mercantile Price Current*, and joined with the higher prices of Waterford butter from the *Economist* in the latter period.

#### FOREIGN ARTICLES OF FOOD.

36. *Sugar*, per cwt., *Gazette* average price of the week nearest the middle of each month, of Muscovado sugar, being the average of West India, East India, and Mauritius sugar. From the *London Mercantile Price Current*, 1844-7, and the *Economist* afterwards.

37. *Spirits*—Jamaica rum in bond, 15 to 25 O. P., per gallon. In some of the earlier years the strength of spirit quoted in the *Economist* is 10 to 20 O. P. As spirits form an exception to the general rise of prices, this discrepancy need not be further noticed.

38. *Tea*—Congou in bond, per lb. The lowest price quoted in the *Economist*; but there is some little change in the description.

39. *Pepper*—Black Malabar in bond, per lb.

From the al mean prices for each year were  
drawn prepared, and forms the basis of  
my d

ars 1845-62.

DESCR Com	1857.	1858.	1859.	1860.	1861.	1862.
1. Silver	1.78	61.30	61.98	61.66	60.80	61.48
2. Tin	6.1	118.8	131.4	136.2	122.1	116.2
3. Copper	3.3	108.2	109.5	106.8	99.4	96.5
4. Lead	1.3	22.3	22.5	22.0	20.5	20.7
5. Bar Iron	8.4	143.7	140.2	131.4	125.0	124.8
6. Pig Iron	5.5	90.2	76.2	75.0	68.3	65.0
7. Tin Plate	9.4	33.3	32.9	31.4	29.0	27.9
8. Palm Oil	1.8	39.6	45.2	46.1	45.0	42.5
9. Linseed	0.0	31.2	28.6	28.9	31.3	38.8
10. Tallow	6.6	52.0	55.3	56.3	53.8	46.9
11. Hides	6.6	11.1	11.2	11.3	10.1	9.2
12. Leather	3.3	15.1	15.6	17.3	14.9	14.5
13. Timber	8	64.2	68.4	66.9	69.4	64.4
14. Logwood	71	8.75	7.15	6.64	7.83	104.6
15. Indigo	8	5.0	4.6	5.1	5.4	5.9
16. Cotton,	1	6½	6½	5½	(7½)	(18½)
17. Cotton,	1	8½	8½	8½	(9½)	(17½)
18. Cotton,	1	4½	4½	4½	(5½)	(12½)
19. Wool	2	15.3	18.6	19.7	17.4	18.0
20. Silk	4	16.4	15.8	18.4	17.0	16.6
21. Flax	9	55.4	70.8	64.8	67.0	65.6
22. Hemp	1	29.5	29.2	30.1	31.9	36.0
23. Wheat	3	44.2	43.7	53.3	55.3	*55.4
24. Barley	1	34.7	33.5	36.6	36.1	*35.2
25. Oats	0	24.5	23.2	24.4	23.7	*23.0
26. Rye	3	32.3	32.3	36.3	35.7	*37.2
27. Beans	0	41.9	42.3	44.7	42.4	*40.3
28. Peas	3	42.9	39.7	40.5	41.2	*39.9
29. Hay	5	69.6	72.1	79.7	73.3	67.2
30. Clover	5	89.5	93.5	95.5	95.5	92.5
31. Straw	4	28.5	28.0	31.6	34.0	36.3
32. Beef	4	50.2	51.4	54.6	56.7	46.9
33. Mutton	8	53.9	57.2	60.7	59.7	53.2
34. Pork	6	44.1	48.8	54.2	56.4	52.2
35. Butter	9	107.6	106.5	111.9	109.7	107.4
36. Sugar	3	27.7	26.5	27.6	24.4	24.0
37. Spirits	25	3.53	3.43	3.30	2.72	2.29
38. Tea	2	10.3	12.8	14.5	9.3	10.1
39. Pepper	2	5.0	4.5	4.9	4.8	4.3

lucose it in accordance with principles before considered. 1855-50 was first drawn, and will be found stated in the average according to the undisturbed value of gold, was 62. The ratios or percentages thus got represent from fluctuations. Since 1850 the percentages express the temporary fluctuations. In the following table these per-

1862, to the Average of the Years 1845-50.

1854.	1855.	1856.	1857.	1858.	1859.	1860.	1861.	1862.
103	103	103	104	103	104	104	102	103
142	139	156	160	140	155	160	144	137
143	143	134	140	122	124	121	112	109
134	132	142	137	126	127	124	115	117
124	107	113	106	90	88	82	78	78
131	114	129	120	102	86	85	77	74
104	105	118	124	105	104	99	92	88
149	138	134	140	124	142	145	141	134
137	151	141	145	119	109	110	119	148
150	134	128	137	122	130	132	126	110
136	154	190	247	200	202	204	182	167
130	130	139	185	145	149	166	143	139
107	105	94	94	84	90	88	91	84
113	105	122	119	120	98	91	107	143
158	109	115	127	132	120	135	141	156
100	107	112	135	116	121	102	*144	*349
103	103	105	129	121	123	121	*140	*263
91	101	114	140	123	123	107	*153	*315
105	104	132	152	115	140	148	131	135
121	111	154	199	116	140	164	151	148
114	118	121	125	127	162	148	153	150
105	108	111	106	92	91	94	100	112
140	144	134	109	85	85	103	107	107
113	109	129	132	109	105	115	113	110
130	127	117	116	114	108	113	110	107
140	140	138	117	99	99	111	109	113
127	125	118	116	113	114	120	114	108
116	110	105	105	109	101	103	104	101
118	128	132	100	102	106	117	107	98
117	123	124	103	103	108	110	110	107
114	88	89	91	94	92	104	112	120
119	120	122	122	121	124	132	137	113
105	106	112	122	112	119	126	124	110
96	97	107	112	90	100	111	115	107
126	128	134	136	137	135	142	140	137
80	92	103	131	97	93	97	86	84
143	122	110	140	116	113	109	90	76
127	98	97	144	112	139	158	102	110
153	160	167	166	160	144	156	152	138

To display more clearly the great variations in the above table, free from minor fluctuations, I have grouped together those commodities which seemed to have anything in common, and calculated the average ratios or percentages as described in Sec. II. I have lastly deduced the general average variation from year to year of the whole 39 commodities. The groups and numbers are given in the following table, the contents of which are more easily seen in the diagram facing the title page. The general course of the Bank minimum rate of discount is added in the diagram, as its comparison with the general average course of prices is interesting, and will probably justify my assumptions in Sec. XII.

TABLE showing the ratio of Prices each year, 1845-62, to the average prices of 1845-50.

AVERAGE OF	1845.	1846.	1847.	1848.	1849.	1850.	1851.	1852.	1853.	1854.	1855.	1856.	1857.	1858.	1859.	1860.	1861.	1862.
1. Silver . . .	99.2	99.7	100.3	99.9	100.2	100.7	102.4	101.7	103.2	103.4	103.1	103.0	103.8	103.0	104.1	103.6	102.2	103.3
2-7. Metals . . .	108.1	109.0	107.5	99.2	89.9	90.5	88.9	98.8	122.7	129.2	122.5	131.2	130.1	113.0	111.4	108.8	100.5	98.0
13. Timber . . .	112.6	111.3	111.7	96.0	88.1	80.4	78.5	78.0	102.4	107.3	105.3	94.3	93.9	84.0	89.6	87.5	90.8	84.3
8 & 9. Oils . . .	92.6	95.1	107.6	94.9	100.6	107.9	103.4	98.4	115.1	142.8	144.2	137.4	142.8	121.8	124.5	128.8	88.5	83.7
10-12. Tallow, &c.	106.8	109.0	107.1	97.6	88.9	89.0	96.4	93.8	116.7	138.4	138.6	150.0	184.5	152.5	157.6	164.8	148.7	136.8
16-18. Cotton . .	84.1	95.3	115.9	83.8	92.0	127.7	107.0	100.1	97.8	97.8	103.5	110.0	134.3	120.3	122.5	110.0	110.0	(110.0)
19-21. Wool, &c.	112.0	111.0	101.2	86.4	88.4	100.0	106.9	110.9	120.1	113.1	110.8	135.2	155.9	119.0	147.0	153.0	144.8	144.0
23-28. Corn . . .	100.6	108.8	137.0	97.1	82.7	73.3	76.9	85.3	102.8	127.3	125.2	123.0	115.4	104.2	101.3	110.6	109.7	107.9
29-31. Hay, &c.	128.2	106.1	94.8	93.3	91.6	85.5	88.8	95.1	114.1	116.1	111.7	113.4	97.9	99.7	101.7	110.3	109.8	108.0
32-35. Meat . . .	100.6	103.6	111.4	105.8	89.5	88.6	87.4	87.2	104.8	110.6	112.0	118.5	122.7	113.8	118.9	127.3	126.7	116.3
36-39. Sugar, &c.	107.8	102.6	105.1	90.2	91.2	100.0	97.0	90.2	111.1	132.5	115.5	116.4	144.6	119.4	120.6	126.8	104.4	99.2
14 & 15. Dyes . .	113.0	107.5	103.8	90.2	88.0	97.2	105.2	106.1	128.9	133.4	107.3	118.2	122.9	125.6	108.3	110.8	122.8	149.4
22. Hemp omitted																		
The whole 39 . .	104.4	105.4	110.8	94.1	89.6	92.1	92.4	93.8	111.3	120.7	117.6	122.5	128.8	114.2	116.0	117.9	115.1	113.4

XIV.—*Remarks on the Variation of Prices since 1845.*

The general average variation of the whole 39 commodities may be taken as the nearest representation of the great fluctuations in speculation and investment which we have before considered. All the commodities, excepting perhaps silver, show in their separate fluctuations some influence of speculation. In such natural products as cotton, sugar, tea, logwood and indigo, the variations due to speculative demand are much obscured by irregular fluctuations due to accidents of supply. We see that fibrous materials such as wool, silk, flax, and especially cotton, do not partake in any marked manner of the sudden rise during the period of speculation and permanent investment about 1853. It is in the metals, iron, copper, lead and tin, that we find the variation of demand most perfectly marked, for the curve of these metals is almost exactly that of the general average somewhat exaggerated. Metals, as has been before said, are subject only to variations of demand, or to very slow and occasional variations of supply. Timber shows in the next degree the preponderance of demand-variations over supply-variations. Thus its variations closely resemble those of the metals, with a little more undulation and a general tendency downwards. Oils are chiefly remarkable for the great rise in 1853, more than compensated by the recent fall. The animal materials, tallow, hides and leather, show a strong resemblance to the speculative variations of metals joined with a great and exceptional rise since 1852, which must indicate that the increase of demand tends to outrun a supply incapable of great increase. Butcher's meat shows a great rise in the last ten years, partly no doubt from the same cause. Its highest points usually follow those of hay, clover and straw. The prices of the latter do not show the same tendency to a progressive rise, but then we should remember that the prices apply to London only. The prices of corn, meat and fodder show so much relation to the speculative changes of metals, to the general average variations, and to the rate of discount, that it cannot be doubted there is a strong relation of cause and effect. The bountiful or scarce supplies of food with which Providence favours us in the several seasons, strongly contribute to hasten or retard the several periods of abundant capital and investment, and again those of scarcity and revulsion. The current of human business is ever ready to break into a wave. A good or bad season marks it with a crest or a trough, and the fluctuation multiplies and continues itself.

Yet, according to a known principle, it insensibly tends to fall into pace with the fluctuations of nature, which it may obey but cannot rule.

But we must hasten to conclusions which more immediately concern us.

*XV.—Proof of a Depreciation of Gold pointed out.*

It is hardly necessary to draw attention to the permanent elevation of prices since 1853, which is shown in the curve of the general average. Now it is impossible to account for this permanent change by any excessive speculation, inflation of currency, or credit. For to every extraordinary increase caused by such means at one period there must be a corresponding revulsion soon following. Such a revulsion took place in 1857, but though five years have since elapsed prices are far from having fallen to their old level. In the last two years especially the dearth of cotton has caused a depression of trade of a formidable character. The lowest average range of prices since 1851 has indeed happened in the last year, 1862; but prices even then stood 13 per cent above the average level of 1845-50; and it is most highly improbable that prices will long continue to fall; yet prices have continually stood above the high average point they reached in 1847! *Examine the yearly average prices at any point of their fluctuations since 1852, and they stand above any point of their fluctuations before then!* There is but one way of accounting for such a fact, and that is by supposing a very considerable permanent depreciation of gold.

*XVI.—That Prices are now near a Minimum.*

I think no one will doubt that during the last year, 1862, and at present, we are at or near the lowest point, and at very low water of the commercial tide. The low rate of discount in 1862, and the very low price to which metals especially have fallen, testify this, apart from more general facts. Numerous large foreign loans, and innumerable schemes for foreign or home banks, discount companies, hotel, railway, and other undertakings, involving permanent investments, show that we are in one of those periods which must be followed by a rise of prices and of interest, unless extraordinary events should interfere. The depression of the cotton trade, and the sad political confusion in the United States, at present moderate the tendency to



speculation. But when the end of the civil war, disastrous to the Northern States, comes, as it certainly must, and when the cotton trade begins to resume its wonted course, we may look forward, I confidently believe, to such a period of prosperity as even England has hardly yet experienced. The great danger is that the excess of speculation may bring its usual punishment. But the consequence that concerns us now is that prices cannot fall much further; that they must be regarded as ready to rise rapidly upon the first signs of a revival of trade; that the present minimum will be soon succeeded by a maximum, doubtless surpassing that of 1857; and that the permanent elevation of prices, due to gold depreciation, will then be more apparent to all.

XVII.—*An extended Proof that Prices are now raised above their old level.*

Having ascertained, as I think, beyond reasonable doubt, that prices in the last few years, though comparatively low, and near the turn of the tide, are yet greatly raised above their old natural level, I have not restricted myself to the 39 commodities concerning which this was proved. We may safely say that the prices of all minor commodities are at the same point of their course, and *in the same comparative condition*. A far more expeditious comparison of the recent prices of such minor commodities, with their former prices, will thus serve to confirm or refute the statement that there is a general rise of prices, not due to any temporary fluctuations, but perhaps to a permanent alteration in the value of gold. Again taking the lists of the *Economist*, I selected 79 new commodities, mostly distinct from any of the 39, and likely to vary independently of them and of each other. Quotations of these were taken, as before described, in the middle of the months of February and August, in each of the years 1845-50, and again in 1860-2. The arithmetical average of the twelve quotations 1845-50 was then divided by logarithms into the arithmetical average of the six quotations 1860-2. The ratio or percentage thus obtained represents the rise of price (during a speculative minimum) due to any fall of gold, affected by any change of value peculiar to the commodity. Adding the corresponding data for the 39 chief articles from previous tables, we get the following list of 118 articles, and the ratio of variation of their prices between 1845-50 and 1860-2.

DESCRIPTION OF COMMODITY. (Numbers refer to list on p. 18-20.)				Average Price, 1845-50.	Average Price, 1860-2.	Logarithm of Ratio.	Ratio, or per- centage.
1. <i>Silver</i> . . . . .	std. oz.—d	59.53	61.31	•0128	103		
2. <i>Tin</i> . . . . .	ton—£	85.00	124.80	•1668	147		
3. <i>Copper</i> . . . . .	ton—£	88.30	100.9	•0578	114		
4. <i>Lead</i> . . . . .	ton—£	17.8	21.0	•0737	118		
Red lead . . . . .	ton—£	19.44	23.10	•0749	119		
White lead . . . . .	ton—£	24.00	28.04	•0676	117		
Foreign spelter . . . . .	ton—£	18.56	18.73	•0039	101		
Swedish steel . . . . .	ton—£	14.86	16.71	•0510	112		
5. <i>Bar Iron</i> . . . . .	ton—s	159.6	127.1	9.9011	80		
6. <i>Pig Iron</i> . . . . .	ton—s	88.4	69.4	9.8952	79		
7. <i>Tin Plates</i> (iron) . . . . .	box—s	31.66	29.45	9.9685	93		
8. <i>Palm Oil</i> . . . . .	ton—£	31.87	44.57	•1457	140		
9. <i>Linseed Oil</i> . . . . .	ton—£	26.19	33.00	•1000	126		
Sperm oil . . . . .	tun—£	80.94	96.33	•0756	119		
Olive oil, Gallipoli . . . . .	tun—£	44.6	59.1	•1220	132		
Cocoa-nut oil . . . . .	ton—£	38.63	48.60	•0997	126		
Rapeseed oil, pale . . . . .	ton—£	37.20	45.12	•0839	121		
Linseed cake, foreign . . . . .	ton—£	7.84	10.20	•1086	128		
10. <i>Tallow</i> . . . . .	cwt.—s	42.67	52.37	•0889	123		
11. <i>Hides</i> . . . . .	lb.—d	5.53	10.20	•2656	184		
Hides, Australian . . . . .	lb.—d	2.00	4.19	•3212	210		
12. <i>Leather</i> . . . . .	lb.—d	10.42	15.58	•1749	150		
Calf skins, 28-35 lbs. . . . .	lb.—d	14.83	20.34	•1373	137		
Tar, Stockholm . . . . .	barrel—s	16.7	27.1	•2103	162		
Turpentine, American (1860-1) . . . . .	cwt.—d	100.75	129.7	•1097	129		
„ English spirits . . . . .	cwt.—s	38.10	35.56	9.9701	93		
„ Foreign spirits . . . . .	cwt.—s	34.4	36.5	•0257	106		
Nitrate of Soda . . . . .	cwt.—s	14.27	16.10	•0524	113		
13. <i>Timber</i> . . . . .	load—s	76.40	66.89	9.9423	88		
Quebec oak . . . . .	load—s	93.1	115.0	•0918	124		
Baltic oak . . . . .	load—s	103.8	88.0	9.9283	85		
African oak . . . . .	load—s	180.0	228.3	•1032	127		
Indian teake . . . . .	load—s	230.0	288.3	•0981	125		
Deals, Canada, 1st Pine . . . . .	stand—£	16.44	17.50	•0271	106		
22. <i>Hemp</i> , Russia . . . . .	ton—£	32.04	32.69	•0087	102		
Manilla hemp . . . . .	ton—£	32.58	30.10	9.9656	92		
East Indian Sunn . . . . .	ton—£	16.0	17.5	•0389	109		
Jute . . . . .	ton—£	16.0	16.5	•0134	103		
16. <i>Upland Cotton</i> . . . . .	lb.—d	5.38	5.5	•0100	102		
17. <i>Pernam. Cotton</i> . . . . .	lb.—d	6.8	8.25	•0845	121		
18. <i>Surat Cotton</i> . . . . .	lb.—d	3.85	4.13	•0294	107		
19. <i>Wool</i> , Southdown . . . . .	pack—£	13.31	18.35	•1395	138		
Wool, German, 1st and 2nd . . . . .	lb.—d	41.54	46.67	•0505	112		
Wool, German, tertia . . . . .	lb.—d	19.0	17.3	9.9592	91		
Wool, Sydney lambs . . . . .	lb.—d	18.0	21.7	•0812	121		
Wool, V. D. L., Locks and Pieces . . . . .	lb.—d	10.5	14.3	•1350	136		
20. <i>Silk</i> , Cossimbazar . . . . .	lb.—s	11.22	17.32	•1883	154		
Silk, China, Tsatlee . . . . .	lb.—s	16.0	21.5	•1283	134		
Silk, Raw, white Novi . . . . .	lb.—s	23.65	39.00	•2173	164		
Silk, Organzine, Piedm. 22-24 . . . . .	lb.—s	26.8	38.5	•1574	144		
21. <i>Flax</i> , Riga . . . . .	ton—£	43.8	65.8	•1769	150		
14. <i>Logwood</i> . . . . .	ton—£	7.32	8.31	•0551	114		
15. <i>Indigo</i> . . . . .	lb.—s	3.796	5.465	•1583	144		
Cochineal, Teneriffe . . . . .	lb.—s	5.27	3.18	9.7808	60		
Turmeric, Bengal . . . . .	cwt.—s	14.35	15.79	•0415	110		
Terra Japonica, Cutch . . . . .	cwt.—s	24.02	25.46	•0253	106		
Brazil wood . . . . .	ton—£	34.0	80.0	•3716	235		
Fustic, Cuba . . . . .	ton—£	8.083	8.926	•0431	110		
Sapan wood . . . . .	ton—£	11.63	7.86	9.8238	68		

DESCRIPTION OF COMMODITY. (Numbers refer to list on pp. 18—20.)				Average Price, 1845-50.	Average Price, 1860-2.	Logarithm of Ratio.	Ratio, or per- centage.
23. <i>Wheat</i> . . . . .	imp. qr.—s	51.7	54.7	•0244	106		
24. <i>Barley</i> . . . . .	imp. qr.—s	31.87	35.90	•0518	113		
25. <i>Oats</i> . . . . .	imp. qr.—s	21.55	23.72	•0418	110		
26. <i>Rye</i> . . . . .	imp. qr.—s	32.68	36.39	•0467	111		
27. <i>Beans</i> . . . . .	imp. qr.—s	37.11	42.44	•0584	114		
28. <i>Peas</i> . . . . .	imp. qr.—s	39.50	40.53	•0113	103		
Rice, Bengal . . . . .	cwt.—s	14.12	12.00	9.9294	85		
Sago, pearl . . . . .	cwt.—s	23.75	20.00	9.9253	84		
29. <i>Hay</i> . . . . .	load—s	68.3	73.4	•0313	107		
30. <i>Clover</i> . . . . .	load—s	86.8	94.0	•0346	108		
31. <i>Straw</i> . . . . .	load—s	30.2	34.0	•0515	112		
32. <i>Beef</i> . . . . .	stone—d	41.35	52.73	•1056	128		
Beef, salt, American . . . . .	tierce—s	86.04	118.67	•1396	138		
33. <i>Mutton</i> . . . . .	stone—d	48.13	57.85	•0799	120		
34. <i>Pork</i> . . . . .	stone—d	48.87	54.27	•0456	111		
Pork, salt, American . . . . .	tierce—s	67.71	91.00	•1283	134		
35. <i>Butter</i> . . . . .	cwt.—s	78.63	109.66	•1446	139		
Cheese, American . . . . .	cwt.—s	44.14	55.00	•0956	125		
Lard, American . . . . .	cwt.—s	45.68	59.00	•1112	129		
36. <i>Sugar</i> , Gazette average . . . . .	cwt.—s	28.45	25.33	9.9493	89		
Sugar, Mauritius, yellow . . . . .	cwt.—s	42.3	27.0	9.8051	64		
Sugar, Havana, white . . . . .	cwt.—s	44.33	32.46	9.8646	73		
Sugar, Java, grey and white . . . . .	cwt.—s	41.44	29.33	9.8499	71		
Sugar, refined, 8-10 lbs. . . . .	cwt.—s	67.63	55.70	9.9158	82		
Sugar, Bastards . . . . .	cwt.—s	36.3	19.5	9.7301	54		
38. <i>Tea</i> , Congou . . . . .	lb.—d	9.19	11.30	•0898	123		
Tea, Souchong . . . . .	lb.—d	22.05	23.83	•0337	108		
Tea, Orange Pekoe . . . . .	lb.—d	17.08	17.00	9.9979	100		
Tea, Hyson . . . . .	lb.—d	19.08	20.75	•0364	109		
Tea, Gunpowder . . . . .	lb.—d	32.75	32.50	9.9967	99		
Coffee, Ceylon, ordinary . . . . .	cwt.—s	41.03	60.58	•1692	148		
Cocoa, Guayaquil . . . . .	cwt.—s	33.42	64.25	•2839	192		
37. <i>Spirits</i> , Jamaica Rum . . . . .	gallon—s	3.03	2.77	9.9610	91		
East Indian Rum . . . . .	gallon—d	22.06	18.50	9.9236	84		
Spirits, Geneva, common . . . . .	gallon—d	26.17	25.50	9.9887	97		
39. <i>Pepper</i> , black . . . . .	lb.—d	3.14	4.67	•1722	149		
Pepper, white . . . . .	lb.—d	5.56	9.33	•2248	168		
Cinnamon, Ceylon . . . . .	lb.—s	2.84	1.58	9.7454	56		
Cassia Lignea . . . . .	cwt.—s	70.55	89.10	•1014	126		
Cloves, Amboyna . . . . .	lb.—d	19.8	10.6	9.7286	54		
Cloves, Bourbon . . . . .	lb.—d	8.21	4.00	9.6878	49		
Ginger, East Indian, common . . . . .	cwt.—s	44.8	36.0	9.9050	80		
Mace . . . . .	lb.—d	35.6	19.3	9.7347	54		
Nutmegs . . . . .	lb.—d	29.7	29.5	9.9970	99		
Tobacco, Maryland . . . . .	lb.—d	6.2	6.5	•0198	105		
Seeds, Caraway . . . . .	cwt.—s	37.21	31.50	9.9276	85		
Seeds, Canary . . . . .	qr.—s	72.63	51.42	9.8500	71		
Seeds, Clover, red . . . . .	cwt.—s	45.60	51.33	•0514	113		
Seeds, Coriander . . . . .	cwt.—s	17.08	15.50	9.9578	91		
Seeds, Mustard . . . . .	bush.—s	12.92	15.00	•0648	116		
Almonds, sweet Barbary . . . . .	cwt.—s	44.73	45.92	•0114	103		
Currants, Patras, new . . . . .	cwt.—s	44.00	30.93	9.8469	70		
Figs, Turkey . . . . .	cwt.—s	55.8	42.2	9.8784	76		
Prunes . . . . .	cwt.—s	27.6	29.4	•0274	107		
Raisins, Valentia, new . . . . .	cwt.—s	39.85	32.83	9.9159	82		
Port wine . . . . .	pipe—£	34.5	52.6	•1832	152		
Claret wine . . . . .	hhead.—£	26.5	36.5	•1391	138		
Sherry wine . . . . .	butt—£	44.0	48.3	•0404	110		
Madeira wine . . . . .	pipe—£	36.5	62.5	•2336	171		

The results of the above are displayed in the diagram following p. 84, in which large dots for the 39 chief commodities and small dots for the minor commodities, indicate the rise or fall in price of each upon a logarithmic scale. The thin horizontal lines inserted at intervals decreasing upwards show the percentage of rise or fall. The average rise or fall of each group, and the average rise of the whole, are indicated by dotted lines. At the left hand the chief and minor commodities are represented in two groups, so as to point out more clearly the preponderating rise of prices.

XVIII.—*Remarks upon the average and individual changes of Price.*

From the preceding lists we may deduce the average rise of the whole 118 commodities, or varieties of commodity, by taking the arithmetical mean of the logarithms, and turning it back into ordinary numbers. Doing this separately for the 39 chief, and the 79 minor articles—I find that the prices of the former have on an average risen between 1845-50 and 1860-2 in the ratio of 100 to 116·2, which is equivalent to a depreciation of gold in the ratio 100 to 86·0, or by 14·0 per cent.

The minor commodities, however, give a somewhat different result. In taking the mean I have treated those which are bracketed together in the last column as having the importance only of a single commodity, so that only the mean of the ratios bracketed entered into the general average. We thus find there are 64 independent minor articles of which the prices have on the average risen between 1845-50 and 1860-2 in the ratio 100 to 106·76, which would indicate a depreciation of gold in the ratio 100 to 93·66 or by 6·34 per cent, not half the change shown by the chief commodities.

If we take the average of the whole, *the rise of prices is found to be in the ratio 100 to 110·25 or by 10½ per cent, corresponding to a depreciation of gold in the ratio 100 to 90·70, or by about 9½ per cent.*

This result is one which must I think excite some surprise. During a period of depression, at low water of the commercial tide, the prices of 118 commodities or varieties of commodity, comprising nearly all the great staple articles, stand 10 per cent higher than they did before the gold discoveries, according to the mean level of prices during the preceding commercial tide. One naturally asks, if this is the rise at low tide what will be the rise at high tide. Even in 1857, only 5 or 6 years after the supplies of gold began to arrive,

prices at high tide were 29 per cent above the average, and within the next half dozen years it may be reasonably expected that they will rise considerably higher still, probably from 40 to 50 per cent above the old average of 1845-50.

The rise of the 39 chief commodities in 1860-2 has been stated at about 16 per cent. If we deduce from the table on p. 23 the average ratio of rise for the whole 12 years, 1851-62, we find that it is 13 per cent. This is a correct average of a complete commercial tide, but it of course shows only partially the influence of the gold supplies which were constantly arriving *during* the period.

Nor is our surprise much decreased by considering merely the numbers of commodities which have risen and fallen in price. Of the 39 chief commodities, 33 have risen more or less between 1845-50 and 1860-62, and only 6 have fallen, that is, less than 1 in 6. Although it is against the principle I have adopted in this inquiry to refer to the individual circumstances of commodities, it hardly needs to be pointed out that of these 6 exceptions, three, bar iron, pig iron and tinned iron plates are only forms of one commodity, for which there was an extraordinary demand during the period 1845-50, and a very slack demand during 1860-2. Both iron and timber, another exception, being articles subject to great demand-variations might thus from their peculiar circumstances have been excluded from the inquiry, had not the principle of the inquiry forbidden exclusion. Sugar and spirits stand out as the only two obstinate and real exceptions to a general rise of prices; but, again, as Jamaica rum, quoted for spirits, is made from sugar, they might be said to form only a single exception.

It is somewhat otherwise with the minor articles. Of the 79 varieties of commodity, 29, or more than 1 in 3 have fallen in price. If we do not count separately those varieties of commodity which are bracketed together, we find that out of 64 articles, 19, or rather less than 1 in 3, have fallen in price.

It is quite obvious that the exceptions consist almost entirely of spices, fruit, and foreign articles of food, which are not employed in the manufactures of the English people, but only applied to their personal use. The distinction is so well marked and interesting, that I give the following averages. Twelve groups of articles have risen in price, and by the following amounts:—

Tallow, hides, etc.	58 per cent.	Dyes . . . .	9 per cent.
Wines . . . .	41 „	Grain . . . .	9 „
Meat and butter .	28 „	Hay, clover & straw	9 „
Oils . . . .	27 „	Timber . . . .	8 „
Fibrous materials .	27 „	Metals . . . .	6 „
Tar, turpentine, etc.	18 „	Hemp, jute, etc. .	2 „

Six groups of articles have fallen in price, and by the following amounts:—

Sugar, tea & coffee .	5 per cent.	Fruit (foreign) .	14 per cent.
Seeds . . . .	7 „	Rice and sago . .	15 „
Spirits . . . .	9 „	Spices, tobacco, etc.	15 „

There can be no doubt that the groups which have risen in the highest degree, such as hides, tallow, leather, wines, butchers' meat, and oils, have so risen from preponderance of demand over supply. They comprise articles of which the demand increases rapidly with the wealth and population of the country, while the supply is naturally limited; they comprise the principal animal materials. On the other hand, all the groups which have fallen in price are of vegetable origin, and chiefly of foreign growth. As a general rule, then, animal and mineral substances have risen in price, and vegetable substances fallen. But this does not prevent our asserting that, on the whole, there is a great general rise. *The groups of articles which have risen are twice as numerous as those which have fallen, comprise immensely more important articles of wealth, and have risen more than the others have fallen.* There can be no room to doubt then, the great preponderance of the rising prices over the falling prices, as will be more fully shown in the next section.

The marked distinction between the classes of materials which have risen in price, and those of foreign articles of food which have fallen, suggests its own explanation. It is English manufacturing skill which invests the materials with such useful and attractive forms, that they are desired all the world over. The great demand thus arising for our manufactures, causes the demand for their materials to increase generally, and the prices of most of the materials must increase with their demand. On the other hand foreigners can only purchase our manufactures by offering something in return. When they can offer materials of manufacture, they share the advantage of the rising prices; but often they can only offer

foreign articles of food and luxury, for which there is a stationary, or but slightly growing demand. To increase their purchases it is necessary to increase their sales, which can only be done by forcing their produce upon our markets at reduced prices. It is thus that manufacturing skill, making our produce more desired and dearer, turns the balance of purchases in our favour, and makes foreign produce cheaper in our markets.

#### XIX.—*Of other Modes of Reduction.*

It may yet seem to many absurd to take a mass of 118 commodities, and treat them as equally good measures of the value of gold, some being so greatly more important and more free from fluctuations than others. I have considered and tried many ways of reducing an average which should more or less obviate this objection. I proposed to give to each commodity a greater weight, as the range of the highest and lowest prices during 1845-62, was less; but on applying this notion to the thirty-nine chief articles, I found that, always excepting silver, the highest price of nearly every one was just about double the lowest price, so that the method could give no result appreciably different from the simple average.

If we were to assume that there is a certain interdependence between the prices of different articles, it would follow that the true mode of reducing an average would be to give each commodity a weight proportional to the quantity of it sold in the country during a fixed period of time. The only result of such a method would be to make our final estimate approximate to that of the 39 chief commodities. For the value of the total quantity of these sold in a year must be several times as great as that of the minor commodities. The superior importance too of some commodities is allowed for by quoting several varieties.

Another method I tried was to exclude all commodities which have undergone exceptionally great changes. Thus assuming the logarithm  $\cdot 04202$  to be a first approximation to a correct average. I would take a fresh average of all those commodities whose ratios lay between  $\cdot 1000$  and  $\cdot 18402$ , or  $\cdot 14202$  on each side of the first average  $\cdot 04204$ . The new result, however, was not noticeably different from the old one.

I conclude that the 10 per cent may be taken as the best approximation we can get to the rise of prices between 1845-50, and 1860-2.

It corresponds to a depreciation of gold of about 9 per cent., that is 100 : 110 :: 91 : 100 nearly.

It may seem to some that the best and perhaps the only way to ascertain whether and why prices have altered, is to examine the circumstances of demand and supply of each article. I do not hesitate to say that the whole inquiry would be thrown into confusion by any such attempt, and that for the particular purposes of our inquiry it is better not to know any details concerning the articles. If you are able to explain the rise or fall of one commodity by circumstances unconnected with gold, and throw it out of the inquiry, you must do the same with others, or else the impartial balance of the inquiry is overthrown. Now there is not a single article but is affected by many circumstances besides the alteration in gold. A searching inquiry into the circumstances of every article would result in every one being thrown out as unworthy of reliance as a measure of the value of gold. It is only by ignoring all those individual circumstances, and trusting that in a wide average, such as that of 118 articles, all individual discrepancies will be neutralized, that we can arrive at any conclusion in this difficult question.

It should be clearly understood that all the preceding parts of this inquiry are independent of any assumptions as to the cause of the fall in the value of gold. I consider that I have simply established the fact of an alteration in the usual rates at which gold was exchanged against the great mass of other commodities. Any variation of demand or of supply affecting most commodities, to the exclusion of gold or in a greater degree than gold, or on the other hand affecting gold to the exclusion of other commodities, or in a greater degree than these commodities, may be the complete or partial cause of the alteration. Numerous circumstances might be called in as contributing causes, but all facts that I am aware of are so inconsiderable beside the great discoveries of gold, that it is impossible not to treat these discoveries as the substantial cause of the depreciation. This must be borne in mind in reading the following pages.

#### XX.—*Of the Price of Silver.*

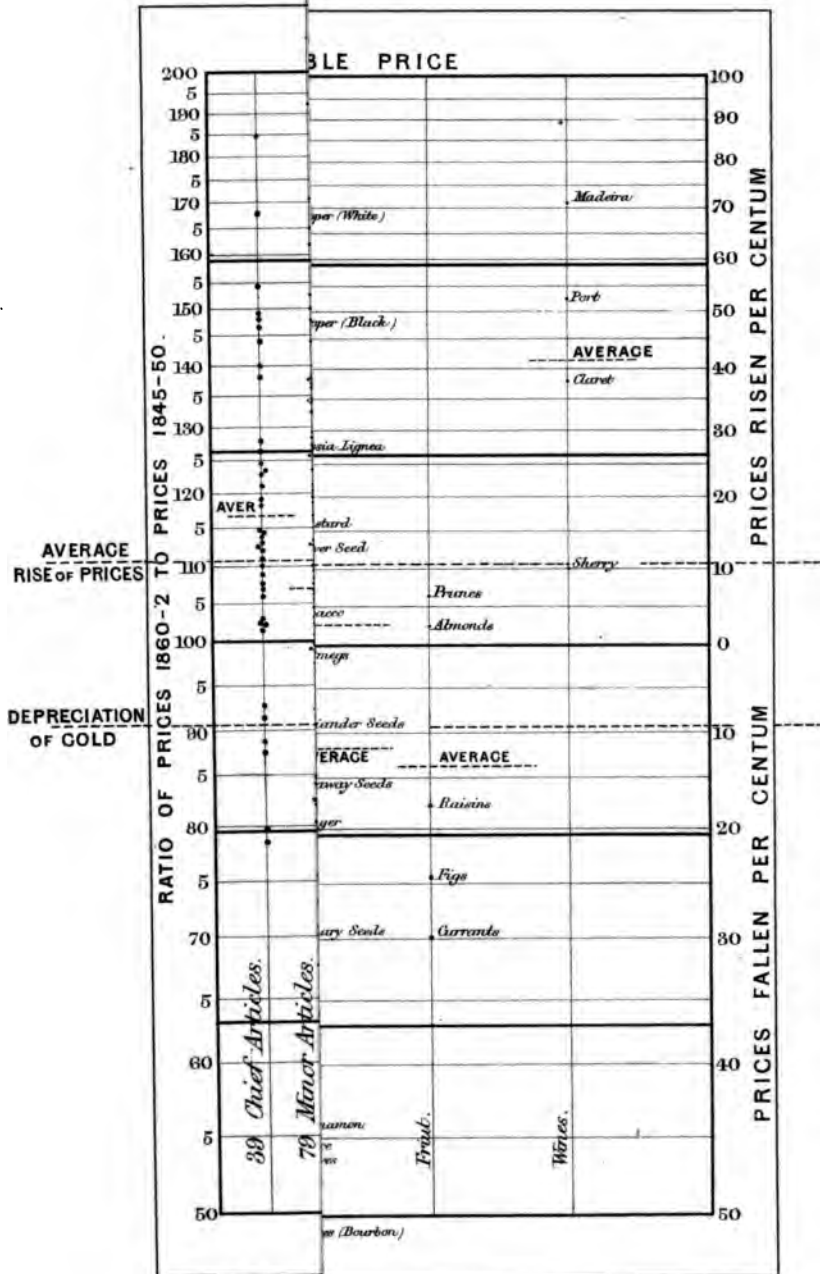
It will probably be asked—if prices in general have risen 10 per cent, or thereabouts, how is it with the price of Silver? This metal is as good a standard of value as gold; by some it is thought to be better. Ought we not to find every change in the value of gold



exactly indicated in the price of silver? This question has at once presented itself to every one who turned his attention to the subject. It is, I conceive, because the question has not been in general rightly answered, that the depreciation of gold has been so much doubted.

In the first place, it is far from true that no change has taken place in the price of silver. In tables or diagrams already given, we see that a permanent rise of at least 3 per cent has taken place. Before the year 1850, the price might be said to stand permanently below 60 pence, or 5 shillings the standard ounce Troy. During the year 1850 a sudden rise took place, and the change has proved so permanent that only one monthly quotation (May, 1852) has since been below 60 pence. It is true that the rise has not been progressive; having attained an elevation of about  $3\frac{1}{2}$  per cent in 1854 over the old level, the price has remained nearly stationary, and even slightly fallen back since 1859. That the gold price of silver should remain stationary has, however, been accounted for by M. Chevalier, though I must point out a great oversight in that writer's view of the matter.

By a French law of the 7 Germinal, year 11 of the Revolution, an attempt was made to combine gold and silver in the French currency. It was enacted that silver or gold might be used at discretion in any payment, in the proportion of  $15\frac{1}{2}$  parts of silver for 1 part of gold. The law adopted the proportion of values which silver and gold had long possessed, and continued to possess for some 50 years longer. But this proportion, as we have shown, was altered to the extent of 3 per cent, about the year 1850, so that  $15\frac{1}{2}$  ounces of silver became more valuable than the ounce of gold for which they were legally payable as money in France. Thus it became cheaper to pay in gold in France, and to pay the silver of France away in foreign payments. And so long as there is much silver coin current in France, and the law of the year 11 holds, it will be possible for merchants, by importing gold against silver, to gain the difference of the natural and the legal rates of value in France, *minus* charges of carriage, insurance, etc. Very correctly M. Chevalier argues that so long as this state of things lasts, it will be impossible at London, Brussels, Hamburg, or even at New York, or any other great centre of commerce, for gold to fall in value much below that of  $15\frac{1}{2}$  times its weight of silver. On these grounds he calls the French silver cur-



E. Stanford, lith. Cha



rency a *parachute which retards the fall of the value of gold*. Here is the great oversight. The French currency may and does prevent gold from falling much below its old *relative value to silver*, but it cannot prevent either gold or silver from falling in value. The inevitable conclusion drawn from my tables of prices is that gold has fallen say 9 per cent; silver has risen in value compared with gold 3 per cent; the difference, 6 *per cent, must necessarily represent the depreciation of silver*. Nor is it hard to see that, from the change of the French currency, silver must participate temporarily in the fall of gold.

The moment the abundance of the Australian and Californian gold has altered the relative values of gold and silver by a certain amount, it becomes profitable for French merchants to buy up with silver *all* gold they can get at or below this new rate on the one condition that other countries will take French silver in return. One hundred millions of gold flowing into France cause an overflow of one hundred millions of silver out of France. This vast supply of silver is just as unusual, sudden, and superfluous, as the supplies of gold from Australia and California. France, in absorbing the new gold, pours out silver just as if it had come from newly-discovered silver mines of extraordinary richness. There can be but one result. The value of silver must fall before the new and unusual supplies can be disposed of. Suppose it to fall so that silver and gold nearly resume their old relative values. The substitution of gold for silver in France is now no longer profitable. Gold accumulates on the London and other markets, and therefore again begins to fall in value. This cannot proceed far without it again becoming profitable to substitute gold for silver in France. Gold is again readily absorbed; silver again becomes superfluous and depreciated. Gold and silver thus alternately accumulate upon the markets of the world, and their values alternately fall down to the point at which it becomes possible to dispose of the one or other metal in foreign markets, especially in India. What is here described as taking place by steps, may also take place continuously and simultaneously. The superabundance of gold flowing into France, causes a superabundance of silver to flow out, just as a stream flowing into one end of a reservoir that is already full, causes an equal stream to flow out at another part. Both metals are depreciated in company, and nearly as much as gold alone would have fallen had the French currency

law not existed. Not quite so low, indeed, because by that law it is now possible to dispose of the new gold either by direct use, or indirectly by disposing of French silver at its reduced value, and putting gold in its place.

There is nothing new or strange in this sympathy between the values of two articles. Any two articles which can be used more or less one in the place of the other, vary in price together. A comparative abundance of either article causes it to overflow into channels of consumption usually filled by the other. When wheat is cheap, it is lavishly used as fodder for horses, stock, for distilling, and a variety of other uses to which inferior kinds of grain or other produce are usually applied. Thus the cheapness of wheat causes most other kinds of agricultural produce to be cheap, and similarly of other groups of commodities.

These effects of the French currency law are far from being indicated by theory only. The tables already given show by the force of facts that the price of silver has not risen so much by some 6 per cent as the prices of 117 other articles. *This constitutes a depreciation of silver.* On the other hand, statistics of undoubted accuracy show that in 1859 about £100,000,000 of gold had been absorbed by France, a large amount of silver being given out. Previously to to the year 1852, the annual imports of silver into France had exceeded the exports. In that year which immediately succeeded the change in the price of silver the stream turned, and the exports have since constantly exceeded the imports by a large amount. These facts are shown by the following data in M. Chevalier's "Essay," p. 47.

1846	Excess of <i>Imports</i> of silver into France	£1,870,868
1847	" " "	2,145,163
1848	" " "	8,557,338
1849	" " "	9,782,708
1850	" " "	2,615,378
1851	" " "	3,117,959
1852	Excess of <i>Exports</i> of silver from France	108,690
1853	" " "	4,675,418
1854	" " "	6,547,751
1855	" " "	7,886,385
1856	" " "	11,342,932
1857	" " "	14,500,835

The large amount of silver thus thrown upon European markets has been disposed of in Eastern markets, thus causing, as I think, that remarkable drain of silver to the East which for eight or ten years back has excited so much surprise in the commercial world. Some excellent writers have attributed this drain to the balance of trade between Europe and India, as disturbed by the transmission of English capital to railway works in India. The drain of precious metals, thus accounted for, then serves to explain the supposed fact that the precious metals have not fallen in value here. It would be extremely difficult, if not impossible, to prove or disprove anything *à priori*, by the balance of trade between Europe and the East. But having shown upon a wide basis of facts that both gold and silver are depreciated here, I am much more inclined to regard this depreciation as the cause of the Eastern drain. The fall in the value of silver, compared with most other goods, makes it more profitable to pay for Eastern produce with silver bullion than with our manufactures, silver being always acceptable among Asiatic nations.

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## CHAPTER III.

### DEDUCTIONS ON OTHER GROUNDS, CONCERNING THE FUTURE VALUE OF GOLD.

#### XXI.—*Of the Rate of Fall of the Value of Gold.*

WRITERS have usually treated the fall of the value of gold, as if it is a remote event that will happen suddenly *after* the accumulations have become great. M. Chevalier's theory about the *parachute* has contributed greatly to nourish and support this notion. Nothing however can be more mistaken. The most sudden fall must occur at the first, and the value of gold will fall more and more slowly as time gets on, and the total accumulations of gold grow. This is a simple consequence of the fact that gold is chiefly used as currency, so that its value varies nearly inversely as the total quantity in use. Let us take the Estimate of Tooke and Newmarch, and suppose that the quantity of gold in use at the end of 1848 was 560 million pounds sterling; let us further suppose 20 millions to be the subsequent annual excess of supply over consumption. Then, at the

end of a year 580 millions were in use, and the value of gold was reduced in the ratio  $\frac{560}{580}$ ; at the end of two years 600 millions were in use, and the value of gold was reduced in the ratio 600 : 560, and so on. Thus we get the following:—

End of year.	Quantity of gold in use. Million £.	Total fall in value of gold per cent.	Total fall per cent, during each year.*
1848 . . .	560 . . .	0 . . .	0 . . .
1849 . . .	580 . . .	3·4 . . .	3·4 . . .
1850 . . .	600 . . .	6·7 . . .	3·3 . . .
1851 . . .	620 . . .	9·7 . . .	3·2 . . .
1852 . . .	640 . . .	12·5 . . .	3·1 . . .
1853 . . .	660 . . .	15·1 . . .	3·0 . . .
1854 . . .	680 . . .	17·6 . . .	2·9 . . .
1855 . . .	700 . . .	20·0 . . .	2·9 . . .
1856 . . .	720 . . .	22·2 . . .	2·8 . . .
1857 . . .	740 . . .	24·3 . . .	2·7 . . .
1858 . . .	760 . . .	26·3 . . .	2·6 . . .
1859 . . .	780 . . .	28·2 . . .	2·6 . . .
1860 . . .	800 . . .	30·0 . . .	2·5 . . .

Of course the above numbers are not supposed to represent the real course of the fall, but they show sufficiently, that the rate of falling must be most rapid at first, and decreases by nearly a third within the first 12 years.

In a more general form—if  $a$  be the quantity of gold in the world at any time, and  $b$  the quantity added in each succeeding year, then at the end of  $n$  years, the value of gold is reduced as 1 to

$\frac{a}{a + n b}$ , which is always growing less as  $n$  increases, but at a constantly less rate. Thus the fall during the  $n$ th year is as 1 to  $\frac{a + (n-1)b}{a + n b}$  which as  $n$  increases constantly approaches unity.

#### XXII.—Of the ultimate equilibrium of the Supply and Consumption of Gold.

It is obvious that the fall in the value of gold will become less and less rapid, even on the supposition that the annual supply of new

\* Not found from the preceding column by subtraction, but by dividing the quantity of gold each year into the quantity of the preceding year.

gold remains constant. But this is a very wrong supposition. Even supposing the mines not to become exhausted, there are large numbers of diggers, whose earnings are so small, that any fall in the value of gold will render their labour incapable of supporting them. They will desert gold digging for other more profitable occupations which the colonies offer. The more the value of gold falls the greater the number who will desert gold digging, and the greater the decrease in the produce of gold. Again, as the total quantity of gold in use increases so must the consumption by wear and loss increase. In proportion as the value falls the consumption increases and the supply decreases. The consumption then must at last become equal to the supply, and thenceforth the value will be stationary, or nearly so.

Two assumptions, which are *not far from the truth*, will enable us to put this result in a simple form. Let us suppose that the consumption of gold increases in the same proportion as the whole mass in use; and since the value falls inversely as that whole quantity, let us further suppose that the supply decreases in the same proportion as the whole mass in use increases.

Let  $A$  be the quantity of gold in use at any time,  $c$  the annual consumption then, and  $p$  which is greater than  $c$ , the annual supply at the time. Let  $d$  be the total addition up to the time when equilibrium of supply and demand is attained, and the value of gold is stationary. At that time then the value of gold is reduced as 1 to

$\frac{A}{A+d}$ . The annual supply at that time, according to our suppositions, is  $p \cdot \frac{A}{A+d}$ . The consumption at that time is  $c \cdot \frac{A+d}{A}$

and the supply is equal to the consumption, or  $p \cdot \frac{A}{A+d} = c \cdot \frac{A+d}{A}$

The solution of this equation gives us  $d = \left( \sqrt{\frac{p}{c} - 1} \right) A$ , so that the greatest amount which the accumulation of gold will reach is  $\sqrt{\frac{p}{c}} \cdot A$ , and the greatest possible depreciation of gold is as 1 to  $\sqrt{\frac{c}{p}}$ , which is independent of the amount of gold in use at any one time.



M. Chevalier's estimate of the probable annual consumption of gold (according to the old value?), is as follows:—

For the extension of currency.

1. Of certain countries . . . .	£4,200,000
2. From increase of population, and well-being generally . . . .	3,080,000
3. From commercial extension . .	3,080,000
For wear and tear of currency . . .	490,000
For hoarding and accidental losses . .	2,100,000
For use in the arts . . . . .	4,900,000

Total annual consumption . . £17,850,000

Joining to this his estimate of the annual production at £35,000,000, we have an ultimate fall of the value of gold in the ratio of 1 to  $\sqrt{\frac{17,85}{35,00}}$ , or nearly as 1 to  $\sqrt{\frac{1}{2}}$  or as 1 to .714. Thus gold would fall in value by less than 30 per cent.

But though M. Chevalier takes the annual production at £35,000,000, he thinks it may rise shortly to £42,000,000. In that case the ultimate fall of value will be as 1 to .65, or by 35 per cent. The estimated consumption adopted by M. Chavalier is in his opinion a great exaggeration, and only adopted to render his argument an *à fortiori* one. Mr. Macculloch,\* however, would by no means be satisfied with even a consumption of £17,850,000 per annum, for he adopts the following large estimate of the annual consumption of the precious metals, *merging the amounts of value of gold and silver together*:—

Wear and tear and loss of coin . .	£7,500,000
Increase in currency . . . .	10,000,000
Used in the arts. . . . .	12,000,000
	£29,500,000

As he estimates the annual production of the mines at £39,050,000, he finds there is only a surplus of £9,550,000, both of gold and silver, to be hoarded, exported to the East, or pressed upon the market. Under these circumstances, the maximum fall of value would be only 13 per cent!

For my part, I cannot but agree with M. Chevalier, that even his estimate of the consumption of gold is greatly exaggerated, especially

\* *Encyc. Brit. Art. Precious Metals*, p. 466.

as regards the extension of currency. A more moderate estimate would indicate a greater surplus produce of gold and a greater probable depreciation, say 50 per cent; but all such estimates are so uncertain that I care not to dwell upon them.

It remains to be remarked, that any conclusion drawn from the preceding calculations is based upon arbitrary assumptions, each of which is more favourable to the fall of gold than by right it ought to be; and that, for simplicity, I have also made an omission in the calculation which similarly tends to exaggerate the conclusion.

In the first place, I make no doubt that the consumption of gold will increase rather more rapidly than its value falls. That large part, indeed, which swells the currency of various countries will follow this simple law pretty exactly; but were gold to fall to anything like half its old value, there could not fail to be a new demand for the purposes of ornament, luxury, and use. This is the first thing that would tend to diminish the fall of value.

Secondly, the mines are far from maintaining their original richness. The alluvial deposits, even in the first ten years, show signs of exhaustion, and the deficiency cannot be fully supplied by quartz-mining. This decreasing fertility of the mines will so strongly tend to arrest the fall of value that we must consider it more fully in another section.

Thirdly, we have treated the £10,000,000 or more of gold annually added to the currency, owing to the increasing requirements of trade, as if it were consumed and destroyed, which is not the case. Being retained in use as currency, it is not only subject to wear and tear, but also requires an increase every year, as its value is depreciated. The result is, that though the mass of gold eventually in use will exceed our estimate ( $A + d$ ), the annual consumption will also be greater—so that it will sooner balance the annual supply. The value of gold will be arrested before it falls to  $\sqrt{\frac{c}{p}}$  of its old amount. To

correct this omission would require calculations of a complexity unsuited to this inquiry, and to obtain any mathematical conclusion, proceeding on other than simple and arbitrary, but approximately correct laws, would, of course, be impossible.

The *extension* of the currency of the world, caused by the spread of commerce, tends to retard the fall of gold. It must not be confused with that increase or *swelling* of the currency which is an

effect of its depreciation. It seems to me that most writers have over-estimated the consumption of gold by the first cause, perhaps by not keeping it perfectly distinct from the latter effect.

XXIII.—*Of the future Supplies of Gold from the Mines.*

The amount of gold which may be procured from almost any quarter of the globe is, so to say, unlimited ; but the critical question is, Will it pay to extract it ? If the gold-fields of Victoria offered to every labourer who chose to resort there the reward of 15s per day, the country would soon be densely populated, its prosperity ever increasing, its produce of gold ever growing, and gold would soon be reduced in value to a half or a third of its present value. Thus M. Chevalier, quoting some statements of the year 1854, when the gold-fever was at its height, takes the ordinary earnings of a miner, whether in Australia or California, to be at least 19 francs per day. • “If, then,”\* he adds, “the auriferous regions preserved indefinitely the same richness, the value of gold might fall until the sum of 19 of our present francs in gold was only equal to the ordinary price of a day’s labour in California and Australia, after the cost of subsistence and the rate of wages should have found their permanent level.”

Such would, no doubt, be the conclusion from the data ; but anything more erroneous than those data cannot be easily found. I speak with the advantage of having resided in a gold-producing colony, and travelled over nearly all the chief diggings of Australia, when I say that the greater number of gold diggers earn small and precarious wages. It has been said, that all mining industry, like speculation in lotteries, is carried on at a loss. This is especially true of gold-digging. From the first, the great attraction of the diggings was in the freedom and novelty of the life, and the exciting chance, however small, of a sudden fortune, than in the reasonable prospect of good steady earnings.

The greater number of the diggers pass a most laborious life, to gain average returns of only a few shillings a day. They continue the occupation more from love of independence than of the gold it produces. They strive to keep up the pleasure of the chase by frequent removals from one digging to another, on the slightest report of new discoveries. There has, in fact, arisen a large class of ex-

\* Cobden’s translation, p. 43.

perienced but nomadic diggers, who are constantly making what are called 'rushes,' and who often, on the most unreasonable grounds, make journeys from one colony to another, 1000 miles or more away. I have seen 10,000 diggers and others assembled in a 'rush' during two or three weeks, on a plot of ground where a rich discovery was 'reported' to have been made, and where a town of wood and canvass was already risen, or quickly rising, with its shops for butchers, bakers, clothiers, jewellers, and with even hotels, banks, and newspaper offices. The excitement of the occupation draws crowds to dig for gold who would make far better profits at their proper trades. The production of gold during past years has thus been altogether beyond the governance of economical laws; it has not been requisite that the produce should pay the cost of production, and remunerate labour as well as other occupations which are open to the labourer.

I cannot think that this present state of gold digging industry will endure. The nomadic class of skilful 'prospectors,' or gold seekers, will die out in some ten or fifteen years more, and gold digging will become a more steady and ordinary occupation. Having less of the attraction of a lottery, the total produce cannot fail to be reduced. Those who have hitherto formed the poorer classes of diggers, will be attracted from the occupation by wages offered in other occupations, and any fall of the value of gold must accelerate this change. I believe it has already done so.

In opposition to M. Chevalier's quotation of a gold miner's earnings in 1854, I will state that in a Parliamentary Paper\* the wages of a farm labourer in 1858, in New South Wales, are quoted at 4s per day, and the wages of a shepherd at 5s 6d. It is well known, too, that for some years back there have often been in Melbourne and Sydney crowds of strong labourers, chiefly unsuccessful diggers, clamouring for employment from the Government at some 4s per day. Owing to the high cost of subsistence in the Colonies, such wages were regarded, and were in fact scarcely more than a pauper's allowance. These facts prove that there is a wide margin of gold production which must be given up as the falling value of gold still further reduces the profits.

\* Statistical Papers relating to the Colonial Possessions of the United Kingdom, Part V. 1858, p. 277. A statement more to the point is in Appendix, Note D, of this tract.

What has been said does not apply so fully to those men, or companies of men, who are furnished with capital and enabled to undertake large sluicing works, deep sinking, or quartz-mining and crushing. That there is a wide area open for such works is beyond doubt. It is equally beyond doubt that certain quartz mines, and certain beds of alluvium, will yield gold for ages to come. But gold-mining will more and more become submitted to the principles of ordinary industry, by which both capital and labour seek the occupation which gives the largest returns. The falling value of gold cannot fail, therefore, seriously to retard such steady gold-mining. And these operations, however well conducted, will not yield the lottery-like returns that were got at the first scramble from the newly discovered alluvium of Ballaarat and Bendigo. The gold produce of Victoria has long reached its maximum, and is declining, partly perhaps owing to the 'rushes' of diggers to New South Wales and New Zealand, but partly, as I think, to the failing richness of the deposits, and the falling value of gold.\*

The only way in which the gold produce could be kept at the high amount of past years, would be by a succession of discoveries of rich gold alluvium. But it seems to be the nature of these alluvial deposits to be easily discovered when once attention is drawn to their existence, and to be quickly rifled of their thickest riches. It is a most singular fact, that in Australia at least, all the richest deposits were found in the first year or two. Ballaarat and Bendigo seem as if they would always maintain the leading position they took at the very first. Though nearly the first spots worked in Victoria, they are likely also to be the last. And so of other gold fields; the first *coup* has generally been followed by a great many lesser ones, but anything like a progressive discovery of gold alluvium seems to be against the nature of things.

The supposition, then, that the gold produce will decrease in the same proportion as the value of gold, is probably less than the truth. The failing richness of the gold deposits will occasion, in my opinion, a still greater decrease; so that the value of gold will be arrested earlier, and at a higher point than according to my assumptions in the last Section.

\* See App. Note E.

XXIV.—*Of the probable ultimate Fall of Value.*

M. Chevalier suggests that the value of gold may fall to half its former level, or by 50 per cent. From a general view of the facts and arguments already presented, I am inclined to think the fall will be arrested at, perhaps, 30 per cent. As I think it not improbable that a depreciation of some 15 per cent has already occurred (though I do not positively assert it), it will follow that the more serious and sudden part of the fall is already felt. As shown in Section XXI., the fall is most sudden at the first.

Having arrived near the limiting value at a rate ever decreasing, the value of gold will probably long remain very steady, because its area of production has been so much extended. Before the recent discoveries, no gold mines of value have been in the possession of any Anglo-Saxon nation. They have been chiefly in the hold of the Spanish and Russian Governments, subject to arbitrary restrictions and taxes. In English or American hands the production of gold becomes a matter of free industry and skill. It must follow, that the produce will conform more closely to commercial principles; a rise or fall in the value of gold will be followed more exactly by an extension or cessation of the production. At the same time, the greater area of production, offering scope for more various competition and equalization of local fluctuations, and the greater and more various modes of consumption, will all tend to render the demand and supply of gold more equable and its value more constant.

XXV.—*That the Values of Gold and Silver will probably return to their ancient proportion.*

It is curious, that the utmost depreciation of gold which can be considered likely, will be just about sufficient to restore gold and silver to the proportional values which they usually held in the middle and older historical ages of the world.

According to the earliest authentic statement which occurs in Herodotus, gold was, in the reign of Darius, 13 times more valuable, weight for weight, than silver.

About 50 years later, the proportion in Greece, according to a statement in the Hipparchus of Plato, seems to have been 12 to 1.

The pillage of the temple of Delphi, in B.C. 357, throwing more

than 10,000 talents of gold into circulation, reduced its value to about 10 times that of silver. This rate, there is reason to suppose, continued until about 170 years after the death of Alexander.

In the Roman world, the value of gold is said at one time to have risen as high as 17 times that of silver. When Cæsar returned from Gaul, with much spoil of gold, its value fell to 9 times that of silver; but these fluctuations were probably temporary. From the time of the Emperor Galba to that of Alexander Severus, the ratio of values was that of  $12\frac{1}{2}$  to 1. Under Constantine, it was  $10\frac{1}{2}$  to 1; after his reign, however, gold became  $14\frac{1}{2}$  times as valuable as silver. During the middle ages the ratio varied between about 10 and 12 to 1,\* but soon after 1600 it began to rise gradually, in consequence of the supplies of silver from the new American mines predominating over the supplies of gold. In 1717 the weights of the English silver and gold coins were adjusted in the ratio of 15:209 to 1, and only changed in 1816, when silver coins were reduced to the subordinate rank of tokens.

Thus, from the time of the earliest historical notice down to the discovery of America, gold was not on an average worth more than 10 or 12 times as much as silver. The superior abundance of silver in America appeared permanently to alter the proportional values, so that for some two centuries last past, gold has been as much as 15 times as valuable as silver. And the proportion has been very steadily maintained.

The Australian and Californian discoveries have now come as the great counterpoise to the Peruvian and Mexican discoveries of the 16th century. Gold, in falling in value 30 per cent, will perhaps return to its old relation to silver—that of 10 or 12 to 1.

It is not at all unlikely, however, that silver is now suffering, or will soon suffer, a certain depreciation, independently of gold. The discovery of the Pattinson process for separating silver from lead, has been equivalent to the discovery of new mines. And were the Spanish American States to be redeemed from anarchy by again falling into the possession of any European government, it is certain, as M. Chevalier has remarked, that they would throw largely increased supplies of silver upon the market. This possible permanent depreciation is, of course, quite distinct from the temporary deprecia-

\* See a table of the English Coinage, Tooke's Hist. Prices, vi. 417—9.

tion of, say 6 per cent, caused by the pouring out of the French silver currency. When the silver currency is nearly exchanged for a gold one, as will soon have happened, this supply of silver will of course suddenly cease, and the price of silver will quickly rise to between 65 and 70 pence per ounce Troy. When the price rises above 66 pence per ounce, it will be necessary to diminish the weight of the English silver coins, in order to prevent their being exported, like the French coins.

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## CHAPTER IV.

### SOCIAL EFFECTS OF THE DEPRECIATION OF GOLD SET FORTH.

#### XXVI.—*How the Effects will be apparent.*

It is worth while to consider what social effect the present depreciation of gold must have, through the virtual alteration of all fixed money payments. The ordinary dealings of manufacturers, merchants, and traders, being terminated in the course of a few months, or, at the most, of several years, will be comparatively unaffected by an alteration of the standard which merely increases the figures in their cash-books and ledgers without altering the balance. It is otherwise with the accounts of any person who, by virtue of a contract, has a fixed sum of gold money to receive or pay on one side of his account, while the sums on the other side, depending on the prices of the chief articles of subsistence or commerce, increase as gold falls in value. The balance of his accounts is deranged in a very serious manner, as disadvantageous to the receiver of the fixed sum of money as it is advantageous to the payer. A fall in the value of gold virtually violates every contract expressed in gold money, and benefits the debtor at the expense of the creditor. Exactly the same effects will follow wherever a payment remains fixed at its former amount by the force of custom and habit. It may, perhaps, be said that there is hardly a person among the 80,000,000 in the kingdom but is affected more or less, for better or for worse, by the change which is taking place. The same may be said of every other country where contracts are performed, and payments made in gold.



There have not been wanting alarming predictions of the social effects which must thus follow the alteration of the standard of value. M. Chevalier says\* of the period of change :—

“ This transition will be an interval painful to pass, and will be marked by innumerable shocks and sufferings. . . .

“ The value of all properties will be subjected to a painful uncertainty, and to injurious fluctuations. It will be still worse for those persons to whom I have already alluded, whose incomes consist of a sum of money (Napoleons or sovereigns) fixed in advance. They will live in a perpetual state of trouble, anxiety, and uneasiness. They will sink by whole sections from their present state to another, in which they will enjoy only the half of their previous comforts; reasoning, as I always do, upon the assumption that gold falls to the half of its present value. They will be flung headlong, without rule or measure, down to a lower station, and without ever having the chance of preparation, for it is the very essence of changes of this kind, subjected as they are to many opposing influences, to pursue an irregular and disorderly course.”

Mr. Cobden, in the preface to his translation of Chevalier's well-known Essay (p. ix.), expresses a similar opinion :—

“ Wages and salaries of all kinds would eventually rise in proportion to the enhanced price of commodities, but the transition would, I fear, be accompanied with much inconvenience and suffering. The rise would not be steady and continuous, but would be effected by leaps, and after struggles which would tend to derange and convulse the relations of capital and labour.”

I think, on the contrary, that the alteration of the value of gold must, especially for the future, be most gradual and gentle in its effects. Far from taking place with sudden and painful starts, flinging the rich headlong down to a lower station, and shaking the groundwork of society, nothing is more insidious, slow, and imperceptible. It is insidious, because we are accustomed to use the standard as invariable, and to measure the changes of other things by it, and a rise in the price of any article, when observed, is naturally attributed to a hundred other causes than the true one. It is slow, because the total accumulations of gold in use are but little

\* Cobden's translation, p. 114.

increased by the additions of any one or of several years. It is imperceptible, because the slow rise of prices due to gold depreciation is disturbed by much more sudden and considerable, but temporary fluctuations which are due to commercial causes, and are by no means a novelty.

It is almost impossible, too, for any person to detect the effects of the change of standard in his own personal affairs. Besides the interference of changes in prices and profits and activity of trade, which affect most persons, each person has his own fluctuations of prosperity and adversity. If his income is not variable, at least his expenditure is more or less so. There are a hundred items of expenditure, some increased, some diminished, and among the variety of unmeasured circumstances, it is impossible for him to *feel* the very slow and measured change of 20 or 30 per cent, spread over 20 or 30 years. If his receipts are variable and increasing, he enjoys the consciousness of prosperity, and probably attributes it complacently to his own abilities and deserts. If his income consists of fixed dividends or rents, he receives the same pieces of money as before, and has no thought that they are not what they were. It is when he comes to pay his household bills that he can alone feel the difference. And then the difference seems to arise from the deficient harvest, from the growth of population, from the extortion of tradesmen, from anything rather than the change of a British sovereign fresh from the Mint. Value is the most invisible and impalpable of ghosts, and comes and goes unthought of while the visible and dense matter remains as it was.

So it certainly has been, I think, in the last 15 years. Prices rose about 1853 so much, that no trader or housekeeper could be ignorant of the change in the case of several articles at least. But then the rise of prices is diversified by occasional falls until the original state of things fades from the memory. The fluctuations noticed are rightly attributed to the prosperity or stagnation of trade, to an increase of demand, or to a war which happens to be waging in some part of the world. It is, in fact, impossible by ordinary observation of two or three articles to separate and detect the change of prices due to gold. Only a laborious inquiry extending over many years, and over most of the articles of commerce, can enable us surely to separate the gradual but permanent effects of gold depreciation from more noticeable but temporary changes. It

is needless to add that the working out of long tables and calculations is not a popular occupation. Thus it is that a considerable fall in gold, and I believe *the most sudden and serious part of the fall that can be expected to occur*, has occurred while almost all the world were either without thought of such an event, or altogether in doubt about it.

XXVII.—*Classification of Incomes according as they suffer from depreciation.*

It will be well to examine rather more closely the effect of the depreciation of gold upon individuals in different circumstances. We can always arrive at the effect by separating those items in their accounts which are fixed money payments, from those which depend on the variable prices of other commodities, or on the rate of wages. So far as fixed receipts are balanced by fixed payments, or variable receipts by variable payments, there is neither loss nor gain. But so far as fixed receipts are balanced by variable payments, and variable receipts by fixed payments, there is respectively loss and gain to the whole extent of the depreciation of gold occurring since the receipts or payments were fixed by contract or otherwise. A further distinction, however, will have to be drawn between receipts altogether fixed, and those depending on fixed charges. The charges of a lawyer are fixed by law, but his income chiefly depends on the number of his clients. The tolls of a bridge are usually fixed by Act of Parliament, but the receipts of its owners depend on the amount of traffic. In every such case we shall have to consider separately in what degree the lowering of the charges effected by the depreciation of the standard, will occasion so much more custom or traffic as to prevent loss of income.

First, taking the receipt side of the account, I will attempt to classify the various kinds and sources of income, according as they are more or less affected by gold-depreciation :—

*The incomes and property of the following are perfectly fixed in money amount and suffer to the whole extent of the depreciation of gold, it being understood that the payments of contracts are expressed in British or gold money.*

British fundholders, stockholders, or annuitants, and holders of *exchequer bonds or bills*.

Holders of bonds, annuities, or any kind of debt (in gold money), due from Foreign Governments.

Holders of bonds, debentures, &c., with fixed interest on money advanced for roads, docks, or other public works.

Holders of preference shares or debentures of fixed interest (and to some extent all shares with guaranteed interest).

All creditors, the payment of whose claims is deferred any considerable period.

Mortgagees.

Owners of leasehold property, as regards the period of the lease.

Holders of policies of insurance, whether upon life or other risks.

Depositors in banks, savings banks, or in private institutions, firms, or in the hands of private individuals.

Owners of any contingent claims, definable in money, upon friendly societies, or other institutions, or upon individuals.

Bank stock proprietors, shareholders of joint stock banks, discount companies, bankers, capitalists, bill discounters and dealers, money-lenders, and all who hold or own capital in the form of money. (It is very difficult in these cases to separate the effect of a variation in the value of gold, in which their capital really consists, from the variation of the value or interest of money, and the varying success of the business.)

Goldsmiths, bullion dealers, misers, or others who hold any considerable quantities of gold.

The Royal Family, officers of state, judges, government employées and others upon the civil list, and with fixed salaries or pensions.

Officers and men in the army and navy.

Half-pay officers, and pensioners not receiving subsistence in kind.

Holders of endowed offices of any kind, fellowships, etc., where the receipts are defined in money.

All persons receiving pensions, alms, or allowances of fixed money amount.

Each of the above classes suffers the loss accruing from the depreciation of gold between the moment when the payment is defined in money, and the payment or series of payments is made (or rather expended). Of course, the loss is inappreciable unless this period of time concerned be several years at least. But a person may suffer the whole effect of the depreciation, although frequently changing the form of his property so long as it is held continuously

in any of the forms above described. Thus, if a person holds his fortune in gold or bank notes, for a time, then as a bank deposit, in consols, in bank stock, finally perhaps lending it on mortgage, he will still suffer the depreciation of the whole period.

2. The next class of incomes contains those *depending on fixed charges, established by law, custom, or convenience*. It is impossible to form more than a rude conjecture as to how far the lowering of the charge will increase the traffic, custom, or activity of business, but I will begin with those that seem likely to have least compensation from this source.

Solicitors, attorneys, and other lawyers whose charges are fixed; their business can only in a very indirect and partial manner receive any increase.

Physicians, with their customary fee of a guinea, will scarcely receive full compensation.

A great variety of payments at exhibitions, theatres, and entertainments, fixed by custom at one shilling, of subscriptions to societies, clubs, charities, &c., school or college fees, pew rents, mostly fixed at customary amounts, are not likely to be wholly compensated.

Fees to registrars, clergymen, public officers, &c., will yield little or no compensation.

Tolls of roads, bridges, and ferries are usually fixed by law, but increased traffic will usually give ample compensation.

Tolls on railways, canals, telegraphs, steam-boats may be raised, or a lowering deferred by the fall of the value of gold; it will depend upon the skill with which the tolls were originally adjusted whether the revenue is increased or diminished by the slight alteration due to gold. In any case, it may be said, that there are few kinds of property that will suffer less from a depreciation of gold. The same may be said of water and gas companies.

Charges of cab-drivers, postmasters, carriers, licensed porters are usually fixed by law or custom, but will be fully compensated.

Post-office charges, especially the penny stamp, will certainly not be raised in consequence of gold depreciation, but the continuous increase of the revenue more than covers any depreciation.

3. Although both the preceding classes of income include a great aggregate amount, the third class is still greatly more comprehensive and important. Among those variable incomes which are *entirely*

*independent of the value of gold, and therefore suffer no loss by its depreciation*, are those of manufacturers, farmers, contractors, mine-owners, shipowners, who depend chiefly on their skill and good fortune; of merchants, brokers, agents, tradesmen, commercial travellers, hawkers, and dealers generally, whose profits usually consist of a percentage on the value of the articles turned over; of artisans, skilled workers, labourers, porters, domestic servants, and others receiving variable wages.

I may add innkeepers, lodging-house keepers; medical men, apothecaries, and others of uncertain charges, performers, of various kinds, and a host of others whose charges and earnings are equally uncertain.

Soldiers, sailors, pensioners, paupers, and others receiving support in kind will not suffer so far. All persons owning land, houses, or other property not in money, will not suffer so far, as they either occupy or use the property or let it for short periods; in leasing it for long periods, and for money rents, they will lose. Clergymen, in receiving tithes and variable rents, will suffer no loss.

There is, however, a very large class of incomes, including wages or salaries, which must be considered of quite uncertain position. In a large proportion of cases the salaries of clerks, officials, and other employés, or the wages of servants and labourers will remain unchanged for long periods of time by want of attention to the changed value of gold, or the general dislike to altering or discussing an agreement once made. In those cases, where the salary or wages remains unchanged, the office or employment must usually be reduced to a lower rank, and command less efficient services. This will often be the case where the income from which the salaries are paid is also fixed, and liable to loss from depreciation. In other and the majority of cases the salary or wages will be raised after the lapse of a certain time. Artizans, mill-hands, and other skilled labourers will obtain the increased wages by strike, if not by the free acquiescence of their employers. It is not unlikely that the great strikes which occurred a few years ago were partly caused by the depreciation of gold.

#### XXVIII.—*Of Expenditure as affected by Depreciation.*

For every person who suffers loss in a fixed income or claim from depreciation of the money in which it is paid there must be some person or persons who gain. But, with few exceptions, the corres-

ponding benefit is very much diffused. There are but few individuals subject to fixed payments of long endurance. The fixed payments enumerated in the first class of incomes are chiefly due from the Government, or from public or private companies, or institutions. It will be shown that, as regards the Government annuities and other fixed payments, the whole community gains in the unintentional remission of taxation which gold depreciation has effected. Foreign Governments and peoples equally gain as regards debts in gold due from them. All public companies, corporations, or their members and shareholders, gain in the partial remission of their debts, the effect being a slight improvement of the dividends. In the case of banks, insurance companies, capitalists, goldsmiths, or others holding any part of their capital as money or gold, their loss, or that of their depositors or claimants, is not productive of any corresponding gain to other persons. They suffer from the actual depreciation of money in their hands. The occupiers or lessees and mortgagors of property gain to the full extent of what lessors and mortgagees lose.

The lowering of fixed charges considered in the second class of incomes, was found to inflict a very partial loss on their receivers, but it occasions a great benefit to the public at large. The payments for conveyance, for amusements, and for a great variety of services, being virtually lowered, persons either spend less upon them than before, or else by availing themselves more freely of such services, they gain in comfort or amusement. The effect is a general increase of business, inducing increased industry and energy, with very slight exceptions, of a most beneficial character to all classes.

As incomes in the third class suffer no loss, there is, of course, no corresponding gain.

The greater part of the expenditure of all individuals consists of payments for food, clothing, variable rent, and innumerable charges which increase *pari passu* with the depreciation of gold. If these charges are defrayed out of a fixed income, the increase of expenditure must either be met by cutting off former savings, by relinquishing former enjoyments, or by exertion in providing new sources of income.

#### XXIX.—*Effects of Depreciation upon the Revenue and Expenditure of the Country.*

It is a principle, and a very right one, of the English tariff, to define all charges as much as possible by reference to fixed weights

or measures of commodity. *Ad valorem* duties are imposed only upon such rich articles as lace, silks, and precious stones, of which the weight or measure bears no constant relation to the value. Thus the tendency to fraudulent misrepresentations concerning the value of goods, is, as far as possible, removed. Similarly all the excise charges and assessed taxes are defined by quantities—pounds of malt, gallons of spirit, number of horses, and so forth. The stamp charges are partly fixed, such as those on most kinds of legal documents. But when a legal document expresses a money claim, the stamp charge is regulated in some proportion to the amount of the money, as there can be but little misrepresentation for the purpose of evading the tax. Among these *ad valorem* stamp duties fall the whole of the duties on legacies, letters of administration, and probates. The larger part of the income tax, and the miscellaneous sources of revenue, are also *ad valorem*, increasing with the prices of articles.

It would not be possible to determine with exactness how much the revenue suffers by the depreciation of gold, without going through the whole of the National accounts in detail. But separating *en masse*, and when necessary by conjecture, the part depending on fixed charges from that which is *ad valorem*, and therefore increases with the increase of prices, we have the following rude estimate for the year 1860:—

	Independent of the value of gold.	Variable with the value of gold.
Customs . . .	£24,391,084 . . .	Inconsiderable
Excise . . .	20,240,467 . . .	None
Stamps (say) . . .	2,040,091 . . .	say £6,000,000
Income and property tax . . .	} Comp. Inconsid. . .	9,666,142
Assessed taxes . . .		
Land tax . . .	2,100,539 . . .	None
Post Office . . .	1,137,084 . . .	„
Woods, Forests, &c. . .	3,310,655 . . .	„
Miscellaneous . . .	Inconsiderable . . .	416,531
	„ . . .	1,801,584
Total Independent . . .	£53,219,870 . . .	75 per cent
Total variable . . .	17,884,257 . . .	25 „
Total revenue (1860)	£71,104,127	100



Turning to the public expenditure of the country, we find it still more impossible to separate the fixed and variable payments, with any accuracy. The following estimate is therefore founded on little more than conjecture. It is made also on the assumption that no salaries or pensions had received any increase in 1860, on account of the diminished value of gold:—

## PUBLIC EXPENDITURE OF 1860 FOR THE UNITED KINGDOM.

	Fixed payments.	Variable payments.
Public Debt . . .	£28,638,726 . . .	None.
Civil List . . .	515,588 . . .	None.
Civil Government (say) .	1,435,116 . . .	£ 497,111
Justice (say) . . .	1,833,078 . . .	1,620,681
Diplomatic (say) . . .	374,336 . . .	50,000
War in China . . .	None . . .	858,057
Army and Ordnance . . .	7,300,000 . . .	6,757,186
Navy . . .	5,000,000 . . .	6,823,859
Public Works . . .	None . . .	945,860
Education (say) . . .	844,334 . . .	446,297
Colonial charges (say) .	142,625 . . .	100,000
Miscellaneous (say) . .	477,685 . . .	400,000
Collection of Revenue (say)	3,321,132 . . .	1,280,568
Total fixed payment . .	£49,882,620 . . .	72
Total variable payment .	£19,779,619 . . .	28
Total real expenditure .	£69,662,239	100
Redemption of Exchequer bonds . . .	2,000,000	
Total expenditure . . .	£71,662,239	

From these estimates it would appear probable that the national balance sheet is scarcely affected in a direct manner by the depreciation of gold. The increase of the variable charges dependent on prices, and forming one fourth part of the expenditure, seems to be just balanced by a corresponding increase on one fourth part of the revenue which happens to be levied *ad valorem*. This is on the assumption that Government salaries in general, and the pay of the army and navy have not been increased. How far these Government employés can be said to suffer, in common with other classes of the

community, by the retention of old rates of salary and pay, will be shortly considered.

We must not forget, however, that even the three-fourths of the revenue which proceed from fixed duties is of the same nature for the most part as incomes included in the second class. Though the charge on each gallon of spirits or each pound of tea be virtually lowered, the usual effect follows, an increase of trade and consumption. The breach in the real value or efficiency of the revenue, even when derived from fixed charges, is soon repaired by the lowering of the charges. And the community derive nearly as much benefit from this unintentional remission of taxation as from any of the great remissions effected by Peel or Gladstone. I am thus unable to agree with the opinion of M. Chevalier, who, with the instincts of a French writer, thinks the results of the depreciation of gold will be a revolution at least.

"There are grounds," he says,\* "for apprehending many other difficulties, political or administrative. It would be necessary to enlarge the budget, for whenever the State appeared as a customer, it would have to pay dearer than formerly. . . . The augmentation of the budget, assuming it to be considerable, means an aggravation of the public burdens, which excites, even when justifiable, the popular discontent, just in proportion to the degree in which taxation is increased. I believe I run no risk of contradiction, by any politician, in saying that a Government which should have to double the taxes in the course of a few years would thereby incur very great peril."

The revenue naturally increases more than *pari passu* with the expenditure during a depreciation of gold, so that unless warlike preparations, or the demands of the people for lower taxes absorb the surplus, there will be enough to give a fair increase to the lower classes of Government employés. But of late years the English people have seemed to think the first duty of their Government is to take off taxes. The rise of the *nominal* amount of the revenue and expenditure no doubt contributes to the impression that the amount is excessive.

### XXX.—*Influence of Depreciation on the National Debt.*

The most remarkable effect of the depreciation of gold is a considerable reduction of the National Debt. This, it is needless to say, is an event which few of us could have hoped to live and see.

\* Cobden's translation, p. 120.

The National Debt of this country was in 1860 represented by a capital of £819,079,305. The annual charge was then £26,176,275. A gold depreciation of 9 per cent., which is quite the least I can believe to have occurred, must therefore have effected a reduction in the capital of about £75,000,000, and in the annual charge of nearly £2,500,000. The gain from this reduction is shared in by all taxpayers in the kingdom, nearly proportionally to the amount of taxes they pay. Let us consider how the loss is distributed.

The dividends of the National Debt were in 1860 distributed among 268,342 persons, as follows:—

Dividends not exceeding		Number of persons entitled to such dividends.	
	£5	.	94,560
"	£10	.	43,845
"	£50	.	86,809
"	£100	.	22,516
"	£200	.	12,787
"	£300	.	3,646
"	£500	.	2,417
"	£1000	.	1,091
"	£2000	.	361
Exceeding	£2000	.	210
			<hr/> 268,242 <hr/>

Nearly a quarter of a million of persons (247,730) receive less sums yearly than £100. As several children or other dependents on an average must share in the benefit of each annuity, it is probable that about one million persons, or about one in every thirty of the total population of the kingdom, depend more or less for support upon the public annuities. Of the larger sums too a considerable portion consists of the incomes of hospitals, schools, and other endowed institutions of public benefit. Some portion of the debt forms the reserve of securities of banks, insurance companies and other monetary institutions. Nearly the whole sum of money in the Government and Post Office savings banks is invested in the public funds. We should never forget, then, that the National Debt represents the savings of the poorer classes, rather than the money bags and coffers of the rich and luxurious.

Should gold, in the course of years, fall in value some 30 per

cent, as I think possible, the pressure of the National Debt will be no greater than if it were about 550 millions sterling, instead of 800 millions according to the old value of gold. Annuitants will suffer and taxpayers in general gain in simple proportion to the fall.

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## CHAPTER V.

### IS A REMEDY NEEDFUL OR POSSIBLE?

#### XXXI.—*How far is positive hardship inflicted on Annuitants and Creditors by Depreciation?*

No one can feel much commiseration for the richer classes of the community even when their expenditure presses distressingly close upon their income. A footman, a horse, a ball, or a shooting excursion retrenched during the year, will restore the balance without inflicting any very great hardship. How is it with the large mass of persons whose incomes of £50 to £150 a year afford them little more than the necessities and decencies of modern life? A reduction of real income by 10, 15, or ultimately by 30 per cent, would sorely press upon their comforts, and even reduce them in the social scale, unless there were some compensating tendencies. But no one, I think, can look at the real progress of affairs in this country, during the period under consideration, without concluding that an alteration of 10, 15, or even 30 per cent, is almost swallowed up and rendered inconsiderable among the many improvements and ameliorations, and the general increase of industry, profit, and general prosperity which is taking place.

It must be distinctly understood that the general rise of prices which I have proved refers to raw materials, and especially to those raised by the same processes now as 20 years ago. Manufactures in general have certainly not risen so much as the materials from which they are made; very possibly they have fallen. They fall in price, or do not rise, because new and cheaper modes are constantly invented for making them. Thus, to a great extent, we can scarcely be said to use the same articles now as we did 20 years ago, or as

our fathers before us. Railways are radically different things from stage coaches—telegraphs from postmen or private messengers; and similarly half the woven fabrics, hardwares, and other articles we use, though serving the same purposes, are different from what we used 20 or 30 years ago. It would be impossible to trace the effects of mechanical skill, of improved and more rapid conveyances, and of the removal of legislative restrictions in cheapening and advancing all processes of manufacture.

That manufactured articles grow cheaper rather than dearer is no contradiction to our conclusion concerning a rise of prices. New manufactures must be regarded as new articles altogether—new gifts of science and patient industry. It is the old materials which have risen in price, and contribute, indeed, to maintain even manufactures at a higher rate.

And then the removal of customs duties from some hundreds of minor articles, and its reduction on most of the chief articles tends to counteract the rise of prices. For the prices quoted in lists, and used in my tables, are mostly for articles in *bond*, duty unpaid. Then, we must remember, that charges enumerated in the second class of sources of income, as well as three-fourths of the whole taxation of the country, have not increased with the increased prices of materials. The very discovery of the American and Australian diggings, by creating two or three new colonies, drawing off part of our population, and opening new branches of trade of the most profitable kind, has contributed to the general prosperity.

The repeal of the Corn Laws alone, leading to an enormously increasing yearly importation of food, to a positive decrease of the agricultural population, and a great increase of our town population, is a concession to the tendencies of our country, beneficially affecting (for the present at least) the position of certainly all save land-owners, and them too as many persons think.

The effects of such and of many more changes effected during the last twenty years or so, is seen in a general increase of wealth and of mercantile industry and profits. Thus only can be explained the extraordinary high rate at which the interest of money has in the last ten years often stood. During 1854-7 the rate of interest was only for a few months below 5 per cent, but for many months above it. For more than half a year it stood at 6 and 7 per cent, and, in the

end of 1857, stood for nearly two months at 10 per cent. Again, in 1861, interest rose to 6 and 8 per cent, and all this, to the surprise of the elder generation, without the general stoppage of trade, the breach of credit, and the flood of bankruptcy, which has hitherto attended such rates of interest. And it is certainly not to an increasing scarcity of capital we should attribute such rates, but rather to a greatly increasing profitable field for its employment.

All these great changes beneficially affecting every individual in a hundred ways forbid us to assert that any person has suffered positive loss of the necessaries and comforts of life by the depreciation of his income in the last twenty years. The expenditure on the principal kinds of food must certainly be greater than it was, but there may easily be at least a corresponding decrease of expenditure on clothes and innumerable other articles. Thus, I think it cannot be asserted or proved that positive hardship, that is, *loss of comfortable subsistence*, is inflicted upon any person by the present or even a greater depreciation of gold.

XXXII.—*Of Comparative Hardship inflicted on Owners of fixed Incomes.*

There may be comparative if there is not positive hardship inflicted upon persons of fixed income. Half the expenditure of all classes, down to the artizan at least, is required to keep up a certain style of living, dressing, and appearing before the public eye, which is considered decent and necessary for each person's position, or, at least, which he considers necessary and desirable for himself and his family. The great general increase of incomes in the third, and even in the second class, enables a large part of the community to improve their appearance and style of living. This is more especially apparent in the wealthier classes, as, for instance, the altogether extraordinary extension of the West-End of London over Pimlico, Brompton, and Kensington, testifies in some faint degree. Now, every wealthy merchant, banker, builder, manufacturer, or landowner, who, by virtue of his increasing wealth, sets up a more handsome establishment than of old, commits a perfect wrong upon his poorer relations and friends, who, with their fixed incomes and growing tradesmen's bills, can hardly make the two ends meet on the old footing.

Whatever we may conclude as to the positive hardship it is impos-

sible that any social improvement, or anything in short but restoration of the value of gold can prevent comparative hardship. Those merchants, manufacturers, and artisans, whose profits or wages are growing by the new activity and efficiency of industry, have all the benefits of improved manufactures, and rapid communication as consumers. They gain at both ends.

XXXIII.—*Of the Influence of Depreciation on the Community as a whole.*

I cannot but agree with Mr. Macculloch,\* that, putting out of sight individual cases of hardship, if such exist, a fall in the value of gold must have, and, as I should say, has already, a most powerfully beneficial effect. It loosens the country, as nothing else could, from its old bonds of debt and habit. It throws increased rewards before all who are making and acquiring wealth, somewhat at the expense of those who are enjoying acquired wealth. It excites the active and skilful classes of the community to new exertions, and is, to some extent, like a discharge of his debts is to the bankrupt or insolvent long struggling against his burdens. All this is effected without the breach of national good faith, which nothing could compensate.

XXXIV.—*That Creditors have no Equitable Claim to Compensation.*

That there is no legal breach of money contracts by the accidental and unforeseen depreciation of the money in which they are expressed, is obvious. But it will be worth considering how far creditors, especially public creditors, can have an equitable claim to consideration because the community or its government, provides the money and standard of value in which contracts are expressed, and seems perhaps to guarantee it as a standard of value.

All such claim, I think, except perhaps one for mere charity's sake, seems to be done away with by the fact that, generally speaking, *the Legislature never obliged contracts to be made in gold money.* Though very rightly selecting gold as the best obtainable standard and providing a gold currency as a public convenience, it never professed to make gold an invariable measure of value, and accordingly never prevented any persons from selecting other standards if they

\* Encyc. Brit. Art. *Precious Metals.*

desired. On the contrary, from the earliest feudal times, contracts, especially of rents, have been made in corn and other commodities, as well as in personal services.

In the reign of Elizabeth, when the values of gold and silver were threatened, and actually affected by the discovery of America, as is gold now by the recent discoveries, it was actually provided by Act of Parliament (18 Elizabeth), on the advice of the Lord Treasurer Burleigh, and of Sir Thomas Smith, Secretary of State,—

“That in all future leases for life, or for a term of years, made by the several Colleges in Oxford or Cambridge, and by those of Winchester and Eton, one-third at least of the old rent should be reserved in corn, according to the value of good wheat and good corn, to be taken after the rate at which they should be sold at their respective markets, on the next market day before such rents should be due.” And in quite late years, when the new imperial standard weights and measures were brought into use, Acts were passed (5 Geo. IV. cap. 74, sec. 17, and 5 and 6 Will. IV. cap. 63, sec. 14) recognising these corn-rents and ascertaining their quantity according to the new measures. And we find, in fact, that the only legal condition of the validity of any rents, according to the Common Law of England, is “that the *quantum* must be either certainly mentioned, or be such as by a reference to something else may be reduced to a certainty.”\*

The rule was further shown by the exception made by Acts of Parliament in the case of the Truck System—that of paying labourers wages in kind. This system having given rise to many abuses, it was provided that in certain defined trades, wages must be paid in money, clearly showing the perfect freedom to contract in money, or in other commodities which existed and still exists in commercial transactions generally. It is true, sovereigns and bank of England notes are a *legal tender*; but this only means that any claim expressed in pounds sterling is satisfied and discharged by the tender of good sovereigns or bank notes. Just as the Government provides certain measures and weights convenient for public use, and takes care that contracts made according to these shall be inviolate, so it provides money, which is nothing but a system of gold weights. But no one is obliged to use weights of gold rather than weights of any other commodities. All that is necessary to make a good con-

\* Bacon's Abridgement, 7th Ed. vol. vii. p. 4.



tract is that the quantities of commodity mentioned therein may be certainly and accurately known.

Thus it seems obvious, that the law of England has always carefully avoided guaranteeing gold or any other commodity as a real standard of value. It has never guaranteed amounts of value at all, but only amounts of commodity. And no claim for compensation can consequently be founded on the fact that the value of gold is now varying. There is no violation of justice whether in letter or in spirit.

XXXV.—*Have Creditors any claim to Charitable Relief?*

It is altogether another question, as to whether any public annuitants, pensioners or other creditors have any claim upon the charitable consideration of the community. Public annuitants and creditors, I think, have no more claim to consideration than private annuitants and creditors, the guarantee offered by the law being the same in both cases. Though the public, as debtors, might consent to compensate its creditors in some degree, it could not oblige the private debtor who gains by the depreciation of gold, to give up this gain, or any part of it, to compensate his creditor. Thus it would follow, that if the public undertook to compensate any annuitants or creditors, it would in mere justice have to undertake the whole cost of compensating all private annuitants and creditors as well. This may be regarded as a simple impossibility. The consequence of any such attempt would be to greatly increase the public burdens, which otherwise are being decreased by the depreciation of gold. And if it be true that the reduction of income, even of the poorer annuitants, is compensated by the ameliorations of the age, so that no positive loss of comforts is inflicted, there cannot be any sufficient grounds for interfering with the natural course of events.

And, secondly, we should remember that if there were positive hardship from the lowering of the value of gold, it is only one case of hardship out of hundreds which natural fluctuations inflict. No society could subsist under the condition that all hardships were to be relieved. The hardship in question is, at the worst, much slighter than what a commercial revulsion like those of 1825 and 1847, or a failure of harvest such as usually occurs in every decade, or a great war and blockade, inflicts. The loss and suffering inflicted by the present scarcity of cotton is many times more serious than

any that the probable fall in the value of gold will cause. Yet the Government and Parliament too have very rightly not admitted any claim for unusual compensation or relief. By the poor law, indeed, the community saves all from positive starvation, but no government ever could pretend to save any portion of the people from losses and minor hardships entailed by natural, unforeseen, and inevitable fluctuations. A government which attempted to turn itself into an universal assurance company, superseding all individual forethought and individual disaster would soon come to grief, like all other socialistic enterprises.

XXXVI.—*Ought Gold as a Standard of Value to be abandoned?*

It may seem that there is one very simple way of avoiding all the evils and apparent injustice of gold depreciation, viz:—to change the standard of value to silver. This accordingly is what M. Chevalier would advise us to do. There is no doubt much to be said in favour of the proposal. It has always been a mere question of opinion whether silver or gold were the better standard. Now that gold has actually lost its stability, all pretence for retaining it as the standard might seem to be gone. The country may seem to be calmly looking on while every contract, including that of the National Debt, is being violated against the intention of the contracting parties.

Had gold indeed utterly lost its ancient stability of value there would be no other course than to abandon it in favour of silver. But I think that the ultimate effect of the late gold discoveries will be to render gold more than ever the pre-eminent and natural standard of value. The greatly multiplied mass of gold in use, the increased area of production, and the greater variety of nations which share in its production, will finally render it far more steady in value even than it has been. In becoming more abundant gold will become more than ever the natural international currency, by the flow of which the balances of the exchanges of nations are adjusted. It will become more generally the money of the world. So far from our changing from gold to silver as a standard, many years will probably not pass before several countries, which still cling to silver, will be constrained to change to gold. Gold will form the mass of the currency as regards value, even if it do not furnish the standard, and the inconveniences are very great of using

coins varying in denomination, as was the case in England in the early part of the last century.

Gold has not lost its character of a standard by the late gold discoveries. These must be regarded as one of those runs of luck, one of those events of extreme improbability which will in all likelihood not recur in the course of ages. According to the doctrine of chances a person may play whist until he gets a complete hand of trumps, or any other particular hand he likes to name; or he may throw dice until at last sixes are thrown without fail for a whole day. He might have to play for years or for centuries before such events happened and equal periods before they should again. So it is with gold discovery. The great extension of the English race of late years had prepared the way for such discoveries, and when once the gold was accidentally found in California, the attention drawn to the subject led to the even greater discoveries in Australia, and to a tail of minor discoveries in New Zealand, Nova Scotia, and British Columbia. But the present gold fever at an end, centuries will probably pass without such another run of luck. The character of gold as a standard is not much damaged by a variation such as has not occurred more than two or three times in the history of the world; of which the last occurrence was in the 16th century, and of which the next occurrence may be as far in the future as that is in the past. The character of gold is no more changed by these discoveries than is the game of whist by the occurrence of an extraordinary hand of cards, or the climate of the British Islands by one of those cyclones which at long intervals reach our shores.

It is worthy of remark, that gold and many other things will assume an altogether new condition of stability and sameness when there are no longer new lands to explore. The centre of Africa, Borneo, New Guinea, some parts perhaps of Asia, and tracts at the north and south poles alone offer new ground at present. After these parts have been examined as well as they may be, the chances will grow still less of any recurrence of such gold discoveries.

But whether gold be a good or bad standard, it is also to be questioned whether silver is a better one. A change of standard to silver at present would bring no relief, because silver, as I have shown, is depreciated as much as gold, save 3 per cent, which is inconsiderable. And when the French silver currency has ceased to overflow, as it soon must, and the value and price of silver rise, this restoration to

the old value would not, for the most part, benefit creditors, who have suffered or are suffering, but a new set of creditors, including many who may have succeeded to or bought up the claims of former annuitants and creditors at their reduced value, and who have no claim whatever to the benefit.

It is also by no means clear that silver will be more free than gold from future variations of importance.

**XXXVII.—*Have the Gold Discoveries added to the Wealth of the World?***

If we take wealth to be that which is agreeable and useful to mankind, it may be safely said that the mere gold produced by Australia and California represents a great and almost dead loss of labour.

A century or more ago it was the fashion to consider gold and silver as the *only wealth*, because they happened to be the measures and vehicles of gold. Now it is more correctly seen that gold is one of the last things which can be considered wealth in itself, and that in its most useful employment as money, the very scarcity of gold is its recommendation, rendering the value greater, and the weight or quantity to be carried as money less. *It is only so far as the cheapening of gold renders it more available for gilding and for plate, for purposes of ornament, and use other than as money, that we can be said to gain directly from the gold discoveries.* To over-estimate the *indirect* effects of these discoveries, in creating new colonies, spreading the English people and language, and newly animating commerce, is not easy. But in itself gold-digging has ever seemed to me almost a dead loss of labour as regards the world in general—a wrong against the human race, just such as is that of a Government against its people, in over-issuing and depreciating its own currency.

## APPENDIX.

NOTE A.—The sentence on the back of the title page is from certain brief dialogues ‘Imprinted at London, in Fleet-streate, neere unto Sainte Dunstone’s Church, by Thomas Marshe,’ in 1581. They have been attributed to Shakespeare, and were reprinted with his name in 1751.

The real writer, however, was William Stafford. The dialogues attack certain common prejudices against learning, trade, enclosure of land, &c. in a very able and enlightened manner. They are creditable even to the age of Shakespeare, and are interesting and worthy of perusal for many reasons. They are to be noticed here, and have before been noticed in Jacob’s *History of the Precious Metals*, with regard to the great rise of prices occurring at the time, chiefly in consequence of the American discoveries of gold and silver mines. The rise of prices was indeed attributed by W. S. to the debasement of the coin, against which he argued as clearly and successfully as has ever since been done. His mistake was not without excuse considering that the coin had been debased under Henry VIII. and Edward VI. not long before. But the effects of any alteration of the standard are most clearly stated, and the distribution of loss and gain is thus explained :—

“Knight.—I pray you what be those sorts that yee meane. And first of those that yee thinke should have no losse hereby ?

“Doctor.—I meane all these that lives by buying and selling, for as they buy deare they sell thereafter.

“Knight.—What is the next sorte that yee say would win by it ?

“Doctor.—Mary, all such as have takinges, or fearmes in their owne manurance\* at the olde rent, for where they pay after the olde rate, they sell after the newe : that is they pay for theyr lande good cheape, and sell all things growing thereof deare.

“Knight.—What sorte is that which yee sayde should have greater losse hereby, then these men had profit ?

“Doctor.—It is all noblemen, gentlemen, and all other that live either by a stented rent or stypend, or doe not mannure the ground, or doe occupy no buying or selling.”

And elsewhere the Knight says :—

“You my neighbour the husbandman, you Maister Mercer, and you Goodman Capper, with other artificers may save yourselves

\* *Manœuvre*, cultivation.

metely well. Forasmuch as all thinges are deerer then they were, so much doe you arise in the pryce of your wares and occupations that yee sell agayne. But we have nothing to sell whereby we might advaunce ye price thereof, to countervaille those things that we must buy agayne."

NOTE B.—(See p. 14.)

It was the mistaken notion of some few persons that convertible Bank notes might have a peculiar efficacy in regulating prices and sowing the seeds of fluctuations. In the reaction from this error others have gone so far as to assert that there is no obvious relation between the fluctuations of the note currency and the course of prices. The comparison of the general curve of prices in the diagram facing the title, with the corresponding curve of the note circulation, as shown for instance in full detail in my Diagram of the Bank Accounts, will prove a striking relation, viz., that *an expansion of the currency occurs one or two years previous to a rise of prices*. The rise of prices once started proceeds, however, independently of the currency for a time. This is shown in the following table, from which it also appears that the chief additions to the metallic currency are made at periods of rising prices.

Years.	Bank of England Note Circulation.		Variation of Prices. See p. 23.	Gold and Silver Coin issued from the Mint.
	Average of March, June, Sept., Dec.	Ratio to average of 1845-50.		
1843	£19,168,000	95·7	. .	£6,895,000
1844	21,094,000	105·3	. .	4,198,000
1845	21,576,000	107·7	104·4	4,899,000
1846	20,787,000	103·7	105·4	4,901,000
1847	19,561,000	97·6	110·8	5,293,000
1848	18,790,000	93·8	94·1	2,490,000
1849	19,265,000	96·1	89·6	2,299,000
1850	20,261,000	101·1	92·1	1,621,000
1851	20,245,000	101·0	92·4	4,492,000
1852	23,028,000	115·0	93·8	8,936,000
1853	23,471,000	117·1	111·3	12,664,000
1854	21,329,000	106·4	120·7	4,354,000
1855	20,330,000	101·4	117·6	9,245,000
1856	20,083,000	100·2	122·5	6,476,000
1857	20,081,000	100·2	128·8	5,240,000
1858	20,860,000	104·0	114·2	1,690,000
1859	21,855,000	109·1	116·0	3,305,000
1860	21,572,000	107·6	117·9	3,378,000
1861	19,554,000	97·6	115·1	
1862	20,303,000	101·3	113·4	

It must be allowed that these facts are the very ones with which the currency theorists would support their notions. But they are not less mistaken in supposing that the notes have any peculiar effect; it is a superabundance of gold bullion that first turns prices

upwards by a real but temporary lowering of the value of gold in the country. All the gold coin and bullion in the country must be considered as constantly on sale. The issue department of the Bank is the national gold warehouse, and notes are but the warrants, exactly resembling dock-warrants, entitling the holder to certain portions of the gold stored up. Thus I apprehend that a superabundance of gold in the Bank reduces its value and raises prices, just as would a superabundant supply of sugar or tea in the London Docks reduce the value of sugar or tea. It is credit, or the creation of *prospective gold*, which allows prices to continue rising for a time while gold is decreasing. But the really knotty point remains unexplained, that is the exact relation of gold as a *commodity on sale* to gold as the most *perfect form of free capital on hire*.

NOTE C.—(See p. 17.)

Although the comparison of periods just before and after the gold discoveries will exhibit the effects of the new gold most free from other influences, there is an obvious advantage in extending the inquiry further back. By comparing the period 1851-62 with that of 1844-50, and then the latter with the previous period of 1833-43, we shall ascertain, not only whether prices have altered since the gold discoveries, but also, whether the alteration is of an unusual character. The gold discoveries being a new event intervening between 1844-50 and 1851-62, it is not the simple change of price then which is due to the gold, but the *difference of the change* between the two second periods from the change between the two first periods.

I have formed, from Tooke's History of Prices, the Annual Register, and other sources, hasty averages of 24 of the 39 chief commodities for the period of 1833-43, which seems to have formed the preceding rather broken fluctuation of investment.

It thus seems that silver was slightly dearer in 1833-43 than in 1845-50, but was still distinctly cheaper than since 1851. The metals in general did not vary much in price between 1833-43 and 1845-50, but the majority of other commodities fell in price by some 12 per cent.

This considerable change suggested the notion that the average of 1845-50, might be too restricted, and erroneously low. The true period, as shown on p. 16, would be 1844-50, and the year 1843 might also be included without impropriety. Though complete and accurate data for 1843 and 1844 were not available, I carefully examined such as I could readily get, and thus satisfied myself that the inclusion of these two years would have slightly lowered the average (1845-50) adopted, instead of raising it, so that it is, if anything, a little *too high*. The extension of the period in the other direction into 1851 and 1852 would also have considerably lowered the average.

It is therefore certain that prices did truly fall between 1833-43, and 1844-50, but rose between the last period and 1851-62. It must, indeed, be generally known to all who concern themselves

with these matters that the prices of materials of manufacture, and of most other articles, had been continually falling since the great wars. I am the more sure of the fact, because I have by me diagrams constructed from data in Tooke's History of Prices, and from other sources, representing the course of prices from various periods in the last century. Overlooking fluctuations due to variations of supply, and the greater fluctuations due to variations of demand, it may be confidently stated that prices pursued a downward course from 1820, about the time when the currency was re-established on a gold basis, to 1850. The fall, it is true, was most rapid at first. Silver, too, does not share in the fall. We can only explain these facts, so far as I am aware, by supposing that the supply of the precious metals did not keep pace with the demand, or that while modes of procuring, raising, and making other articles more easily and cheaply were constantly being discovered, no such great improvements took place in the procuring of the precious metals. It should be remembered, too, that the supplies of Russian gold were failing, and the Spanish-American colonies were falling into anarchy.

Thus, while industry, trade, and property were rapidly advancing in Great Britain, America, and most other parts of the world, there was no corresponding advance in the production of the precious metals. Prices, both in gold and silver, continually receded. Now if, while the introduction of free trade, railways, telegraphs, and innumerable other improvements accelerated the extension of trade, and the consequent demand for the precious metals, no new discoveries of gold and silver had been made, what must have ensued? *Prices must have continued in the downward course they had pursued for 30 or 40 years before. But they did not continue this course—on the contrary, they turned upwards in a sudden and decided manner, as shown in the body of this tract. And this change was simultaneous with the discovery of the new gold fields. Half the Prerogative Instances of Bacon are exemplified in this instance, and if the philosophy of observation and common sense may be applied to statistical matters, we can draw but one conclusion—that prices have risen in consequence of the gold discoveries.*

But we may now draw another speculative conclusion. The gold discoveries have had the double effect of arresting the fall of prices and then raising them. The total effect is not merely the rise that has occurred, but that rise *plus* the fall that would have occurred. This goes a considerable way to explain why prices have not risen so high as the vast supplies of gold might have led us to expect. It is true we touch upon the argument of several distinguished writers, that the rapid extension of trade would absorb the new supplies of gold and prevent them from pressing upon the markets and raising prices. *But an argument that a rise of prices is not to be expected does not weigh much against the fact that a rise of prices has occurred.* And when to explain away this rise of prices without reference to gold, we are told that the extension of trade and manufacture has



caused a great demand for many materials, and *this has raised prices*, I can only answer that to a similar extension of trade and manufactures generally must be attributed the *fall of prices* between 1820 and 1850. Similar causes have similar effects. *He who allows prices to have risen since 1850, but denies it to be the effect of the gold discoveries, must point out something else in the progress of industry since 1850 entirely different and contrary to the progress before; otherwise, it is natural to point to these gold discoveries as that which has entirely altered the progress of prices.*

NOTE D.—(See p. 43.)

The following extracts from the Melbourne Argus, quoted in the *Journal of the Statistical Society* for September 1862, vol. xxv. p. 397, show how rapid has been the decline in the profits of gold digging.

"We cannot estimate the aggregate earnings of our mining population at more than £8,000,000 sterling, which divided among 100,000 diggers (the exact number returned is 100,463), only gives £80 per head per annum. But even this sum must be considerably in excess of the net earnings of each individual, since from the gross product must be deducted the interest on the mining plant employed, the cost of the fuel consumed by the steam engines, and of the timber required for stabling, the maintenance of the horses used in connection with the whims, pumps, and puddling machines, and a large sum to represent the deterioration of plant, and casualties.

Probably £70 *a-year* would approximate more closely to the average earnings of each miner, and the bearing of this fact upon the value of labour generally in this colony, is too important to be overlooked. The *income of the digger* has constituted a standard by which the wages of day labourers have been adjusted ever since the discovery of the gold fields. The fluctuations in the wages of the latter have been determined by those of the former; and the close relation which has existed, and continues to exist, between the decline in the rate of wages and the average earnings of the miners, as a class, will become apparent by a comparison of them at the undermentioned rates and periods." The data given when uniformly reduced to the rate per day are as follows.

Rate of wages per day.	1854	1857	1861
	s. d.	s. d.	s. d.
Farm labourers (with rations ?) . . . . .	5 10	4 2	2 6
Stock keepers (with rations ?) . . . . .	4 4	3 4	2 8
Masons . . . . .	32 0	16 0	14 0
Carpenters . . . . .	28 0	14 0	11 0
General labourers . . . . .	12 6	9 0	7 0
Miners (gold diggers) . . . . .	8 8	5 6	4 8

As the above are the average earnings of diggers, and many earned much more, of course the majority must have earned something less. Though in the past years of the gold excitement wages were much raised by the attraction of the diggings, it is obvious the real profits cannot fall much lower without the occupation being deserted. A successful gold digger must be a strong, active, intelligent, and even ingenious man, capable of earning good wages in a hundred occupations.

## NOTE E.—(See p. 44.)

The following estimate of the gold produce of Victoria up to the end of 1859, is given by the Registrar General of Victoria.

1851	-	-	£580,587	1856	-	-	£11,942,783
1852	-	-	10,899,733	1857	-	-	11,046,113
1853	-	-	12,600,083	1858	-	-	10,112,752
1854	-	-	9,568,262	1859	-	-	9,122,702
1855	-	-	11,172,261				

The greatest productiveness of the Victoria diggings was attained within two years from their discovery. The fluctuations are chiefly caused by the migrations of diggers, and the following account of the produce of New South Wales, from the *Sydney Morning Herald*, of January 21, 1863, shows a continuous decrease down to the year 1855, and then a continuous increase up to the present time, which about compensates the falling off of the Victoria produce.

	Ounces.		Ounces.
1851	- - 161,880	1857	- - 148,126
1852	- - 199,500	1858	- - 255,535
1853	- - 173,960	1859	- - 293,574
1854	- - 148,900	1860	- - 355,328
1855	- - 107,250	1861	- - 403,139
1856	- - 134,950	1862	- - 584,219

The produce of 1851 is that of half a year only. Some writers have fallen into a serious mistake by treating the export of gold dust from New South Wales as the whole produce. They should have added many millions of pounds coined at the Sydney Royal Mint.

The total supply of new gold during the twelve years 1849-60, has been stated by Mr. Newmarch at 300 millions sterling, which is equal to about 50 per cent, or the half of the total stock of gold supposed to be in use at the beginning of the period. Is it likely? Is it conceivable that the stock of gold in the world, which, before 1848 must have been nearly stationary, should suddenly have grown half as large again without a considerable effect upon prices?

THE END.

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